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Trade and Terroir.

The Political Economy of the World's First Geographical Indications

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Abstract

The world's first geographical indications (GIs) were in the wine sector and focused on the delineation of the location of production, the '*terroir*': the Burgundy wines in the fifteenth century, the Port wines and Chianti wines in the eighteenth century, and the Champagne wines in the early twentieth century. We analyze the causes for the introduction of these GIs ('*terroirs*') and for changes in their delineation (expansion) later on. Our analysis shows that trade played a very important role in the creation of the '*terroirs*' but not always through the same mechanisms. For the Port and Chianti GIs it was exports to Britain that were crucial; for Burgundy it was domestic trade to Paris; and for the Champagne GI it was not exports but pressure from wine imports and new wine regions that played a crucial role. For the expansions of the GIs later in history, other factors seem to have been equally important. Expansions of the GIs in the years and centuries after their introduction followed major changes in political power; the spread of a new philosophy in liberal and free markets across Europe; and infrastructure investments which opened up markets and made exports cheaper from "new" producers.

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1. Introduction

“The vine is more affected by the difference of soils than any other fruit tree. From some it derives a flavour which no culture or management can equal, it is supposed, upon any other. This flavour, real or imaginary, is sometimes peculiar to the produce of a few vineyards; sometimes it extends through the greater part of a small district, and sometimes through a considerable part of a large province.”

Adam Smith, 1776¹

In his 2006 paper “The War on Terroir”, Professor Tim Josling of Stanford University, one of the world’s leading experts on trade policy, argues that “*terroir, the concept of an essential link between location of production and a specific quality attribute, is emerging as a contentious issue in trade negotiations and disputes. This issue is manifest through disputes and disagreements about appropriate protection of ‘geographical indications’ (GIs)*” and that the disputes are spreading though the inclusion of GI protection in various regional and bilateral trade pacts. Since then, trade policy discussions on GIs have intensified.

What makes the discussion complex is that linking quality attributes to ‘*terroir*’ (GI) can have both equity and efficiency effects—as standards in general (Beghin et al., 2015; Swinnen, 2016, 2017). GIs can reduce information asymmetries, thus improving efficiency, but can also create rents for those who own the production factors (such as land owners and vineyard owners). These (potential) mixed effects are at the hearth of current trade disputes.

However, the relationship between trade and *terroir* is nothing new. In fact, in this paper we argue that GIs are not only important in affecting trade, but that trade is a key reason why GIs have been introduced historically. We provide historical evidence that trade has played a crucial role in the establishment of the first GIs and document that reducing asymmetric information and

¹ Edwin Cannan (ed.), 5th ed. London 1904, Book 1, Chap XI, p. 219.

the conflict over the distribution of rent were both important factors. We also document how that most of the original GIs have changed over time (i.e. the *terroir* has been expanded) and explain that these changes have been caused by a combination of economic and political changes.

The first GIs were for wine and they are the focus of this paper. The role of *terroir* has been particularly important in wine regulations, especially in Europe (Ashenfelter, 2008; Ashenfelter and Storchmann, 2010; Cross et al., 2011; Gergaud and Ginsburgh, 2008).² Historically, the wines that were traded were the better quality wines which survived travel over longer distances without losing substantial characteristics, as flavor, and whose higher prices covered transportation costs. Hence trade and quality were linked inextricably. Guaranteeing quality was important for trade and an important instrument that was used was the link of product quality to the region where it was produced: the *terroir*.

In the eighteenth century, Port wines in Portugal and Chianti wines in Italy were among the first to receive a formal GI status (together with Tokay wines from Hungary).³ In both cases the GI/*terroir* was later extended to a much larger region. Arguably the first GI in history is the delineation of Burgundy wines in the fifteenth century, and its delineation seems to have been the most persistent. The first introduction of the more elaborate specification of GIs as we know them today is arguably the delineation of Champagne, the first “Appellations of Origin” (*Appellations*

² Stamped seals, inscriptions in the amphorae, labels and other regulations were used in Ancient Egypt, Greece (Thasos) and Rome to document the wine’s places of origin and prevent dilution of quality wines which fetched high prices (Antonaros, 2006; Grace, 1956; Salviat, 1986, p. 181; Unwin, 1991, p. 131). Later in France, King Charlemagne dictated that grapes could no longer be crushed with feet and the German Duke of Württemberg in 1693 prohibited the use of lead to preserve and sweeten wines, a custom since Roman times that also caused a mortal disease, the colic of Poitou (Combaldieu, 1974; Eisinger, 1991).

³ Our analysis does not cover Tokay. In 1737, Charles VI, Holy Roman Emperor (1685–1740) of the Austro-Hungarian empire, issued a royal decree that defined the geographical boundaries of the Tokaj-Hegyalja wine producing region in Hungary and stated that “... *in the trading the wines produced here are considered as being of equal quality with the Tokaj wine... therefore these should be subjected to the same treatment and stored in barrels labelled identically.*” (UNESCO, 2002, p. 36). It also indicated standards for the wine production, labelling and trading.

d'Origine–AO) in France, in the early twentieth century. The initial delineation of Champagne in 1908 was soon extended to a larger region, but has since remained unaltered.

We analyze each of these cases in detail and draw conclusions on how trade has affected *terroir*. We argue that trade was essential in the initial delineations, but not always through the same mechanisms for the different cases; but that other factors, including major political reforms, changes in the dominant political economic philosophy and changes in transport infrastructure, played a crucial role in later adjustments of the GI.

2. The Delimitation of Port Wine⁴

“It was in delimiting the best wine-growing areas that [Pombal] was positively visionary. By choosing only the schistous soil (and avoiding the granite outcrops in the area) he foreshadowed the whole notion of controlled appellations.”

Hugh Johnson, 1989, p. 228

“(...) the perception of wine as primarily being a luxury product in Britain had less to do with any essential qualities of the wine itself or any peculiarities of British culture. Rather, a policy designed to exclude cheap wine and promote beer shaped what we think of as the canonical British penchant for beer, whiskey, gin and rum for the masses, and claret, sherry and port for the elites.”

John Nye, 2009, p. 7

During the Middle Ages, English merchants traded cloth and manufactured goods for wine and other agricultural goods with countries such as France, Spain and Portugal. Anglo-Portuguese trade grew and in 1353 King Edward III of England negotiated a commercial treaty with the

⁴ “Port wine” was named after the city from which it was exported, Porto, located along the Douro river estuary in northwestern Portugal. It is a “fortified” wine with higher alcohol content (usually 18-20%) achieved by the addition of spirits. In the case of Port, a specific spirit—brandy, obtained by distilling wine—is added to stop the fermentation process (Robinson and Harding, 2015, pp. 289, 570).

merchants of Portugal. In 1367, King Fernand I of Portugal granted judicial privileges to the large English community in Lisbon (Bradford, 1969, p. 26). However, initially there was little trade in Portuguese wine. The red wines from Lisbon, along the Atlantic coast, were perceived by the English as very low quality wines and the wines of northern Portugal were not even traded (Bradford, 1969, p. 31). In 1654, 300 years later, a new commercial treaty between England and Portugal granted “*commercial privileges and religious freedom for the English Protestant merchants*”.⁵ As a result, English Factories (associations of merchants) were created in Portugal to ship wines to Britain.⁶ However, exports of Portuguese wines to Britain remained low, constrained by high duties on Portuguese wines and a perception of poor quality (Chapman, 1907; Lodge, 1933; Unwin, 1991, p. 262).⁷

[Insert Figure 1 here]

This situation changed when Britain went to war with France in 1688. The wars with France lasted 25 years (until 1713) and effectively halted much of the British import of French wines (Figure 1).⁸ Besides the obvious trade problems caused by the war itself, Britain increased tariffs on French wines from 1692 onwards. Ten years later, in 1703, Britain signed the Methuen Treaty with Portugal, reducing tariffs on Portuguese wines. In return Portugal repealed tariffs on English

⁵ English merchants in Portugal could only be arrested by the English judge, were exempted from any taxes and were permitted to hold Protestant services. Moreover, Lodge (1933) writes that a secret article appended to the Treaty stated that the “*customs duties levied on English goods shall never exceed 23 per cent of their value*”.

⁶ As Bradford (1969, p. 34) writes from now on “*the English merchants in Lisbon and Oporto were to be a true colony*”.

⁷ The quality was so poor that large quantities of Portuguese wine were supplied to the navy as the “*beverage of the sailors*” (Bradford, 1969, p. 35).

⁸ In 1714 Britain decided to impose volume tariffs on French wines (and not *ad valorem*). Volume tariffs on wine particularly damaged the imports of cheap wines. The British upper class could continue to consume high quality wines while the lower class shifted to beer consumption. As a result, only high quality French wines were traded to Britain (Dion, 1959; Enjalbert, 1953; Nye, 2007; Unwin, 1991).

textiles (Enjalbert, 1953; Francis, 1972, p. 106).⁹ The result was that tariffs on Portuguese wine were less than half of tariffs on French wine, and slightly lower than tariffs on German and Spanish wine (see Figure 2). The war and the changed tariff structure transformed British wine imports. Table 1 shows how imports of French wines collapsed from more than 70,000 hectolitres in 1675 (62% of British wine imports) to only 11,000 hectolitres in 1714 (6% of British wine imports). Over the same period, the imports of Portuguese wines increased strongly: from 1,700 hectolitres (1% of British imports) in 1677 to 55,900 hectolitres (37% of British imports) in 1713.

[Insert Table 1 here]

After the end of the wars, in 1714, Britain decided to keep high tariffs on French wines and to strengthen its political and economic relationship with Portugal. It maintained the favourable tariff policy on Portuguese wines throughout the eighteenth century and allowed Portugal to further increase its wine exports to Britain: from 55,900 hectoliters in 1713 (37% of British wine imports) to almost 118,000 hectoliters in the 1737–46 period—representing 72% of the total imported wines in Britain (Table 1; Godinho, 1970, p. 523).

[Insert Figure 2 here]

This dramatic growth of Portuguese wine exports to Britain led to important changes within Portugal. When wine exports to Britain started to grow in the seventeenth century, most wine came from the *Viana do Castelo* region located in the northwest corner of Portugal, close to the sea, where British merchants dominated the wine trade (see Figure 4). But as demand for Portuguese wines increased,¹⁰ vineyards plantings spread on the hills along the Douro river, south of the *Viana*

⁹ For an extensive analysis on the political economy of Anglo-French trade see the work of Francis (1972), Ludington (2013) and Nye (2007).

¹⁰ English consumption of Port wines doubled from about 76,000 hectoliters in 1702–13 to about 115,000 hectoliters per year in the three decades that followed (Ludington, 2009, p. 731).

do Castelo region (Croft, 1787; Unwin, 1991, p. 261). These wines were transported on the Douro river and shipped to Britain via the port of Porto. British wine merchants in Porto added brandy to the wine to withstand the travel to Britain, which increased the alcohol content in wines. Soon these wines were known as “Port wines” and they gradually became the main Portuguese wine exported to Britain. Port was perceived as a patriotic drink in Britain because it was not French wine. Port wine even became known as the “Englishman’s wine” since it was discovered, traded and consumed for centuries only by Englishmen (Duguid, 2005; Ludington, 2009, 2013).¹¹

However, the party did not last forever. By the mid-eighteenth century Portuguese wine exports to Britain started falling: they declined from a yearly average of 117.600 hectoliters around 1740 to 98.400 hectoliters a decade later (Table 1 and Figure 3). Port wine prices soon followed. The price of Port wine fell by more than 40% between 1750 and 1755 (Macedo, 1951, p. 48).

[Insert Figure 3 here]

The cause of the drop in British imports of Portuguese wine after 1740 is not entirely clear. What is clear though is that the original producers of Port wine were facing increasing competition from new producers of “Port wine”, both inside and outside of Portugal. First, with growing trade, the production area in Portugal expanded. New (and smaller) wine producers outside the Douro valley were selling their wines as “Port wines” at lower prices in order to stay competitive and to be able to sell their wines to the British wine merchants in Porto (Fisher, 1971; Maxwell, 1995, p. 62; Schneider, 1980).¹² Second, wine producers had started experimenting with new ways of producing Port wines. Initially, merchants added brandy after the fermentation, when the wine was

¹¹ Ludington (2009) also argues that the middle class perceived Port wines not only as “patriotic” (more “English” and less “French”) but also less “effeminate” (more “manly”).

¹² The large (and well-established) Douro wine producers were the nobles and the clergy who owned “*the biggest and best situated vineyards*” (Croft, 1787, p. 7).

ready to be shipped. Then, Douro wine producers started adding brandy to the musts during (and not after) the fermentation—as it is done today for the production of Port wines—and to add elderberries to color the wine (Bradford, 1969, p. 47).¹³ When Britain started to buy less Port wines and the price of port started falling, this technique was immediately blamed by the British wine merchants in Porto as the main culprit. It was argued that the new practices were undermining the quality perceptions of Port wines and thereby causing a loss in market share (Tait, 1936, p. 74; Unwin, 1991, p. 264).¹⁴ Third, Port wines from Portugal faced increasing competition from other “Port wines”, especially those made from Turkish raisins. John Croft (1787, p. 7), a British merchant, wrote that raisin wine was “*generally made of the very worst sort of raisins that come from Smyrna [Turkey] compounded with British spirits, extracted from malt.*” This contributed to a decrease in quality and market share as “*the flood of stretched, adulterated and locally concocted “port” in England began to diminish the reputation of the genuine article*” (Ludington, 2013, p. 146).¹⁵

[Insert Figure 4 here]

¹³ British merchants in Porto argued that fortification during fermentation was an ‘*adulteration*’ and a ‘*diabolical*’ procedure, and that brandy should be added after the fermentation and one should only use high-quality brandy (Ludington, 2009). Interestingly, what was then perceived by some groups as an “adulteration” (i.e., the fortification, the addition of brandy in wines to stop the fermentation, and to increase the alcohol content and sweetness) later became the only used production technique and created Port wines as we know them today (Johnson, 1989, p. 228).

¹⁴ For example, Vizetelly (1880, p. 104) narrates that British merchants wrote a letter to their agents in the Douro in 1754 and accused the landowners and wine growers of a range of abuses and complained about the low-quality of the Port wines. They argued that, due to the low quality, they were losing market share in Britain and other wines were increasingly preferred to them. The agents replied that the British wine merchants initially recommended this practice “*by way of secret*” that “*it was proper to dash it with brandy to give it strength; and with elder-berries to give it colour*” (Bradford, 1969, p. 48; Francis, 1972, p. 203).

¹⁵ A century later, French wine producers would also produce wine out of raisins imported mainly from Greece as a result of the devastating *Phylloxera* insect that destroyed most of the French (and later European) vineyards in the last quarter of the nineteenth century. In France, it triggered one of the most important wine regulations in the history of wine: the definition of wine itself. A 1889 French law (‘Loi Griffé’) defined “wine” as a beverage exclusively made from the “*fermentation of fresh grapes*” (and not dried grapes) (Meloni and Swinnen, 2017).

For the merchants in Porto and the traditional Port wine producers in the Douro valley, the combination of these factors undermined their profitable trade with Britain. The wealthy vineyard owners in the Douro valley (as Luís Beleza de Andrade and Frei João de Mansilha) therefore lobbied for an official delimited zone for Port wine production and insisted that wine produced outside this delimited zone could not be exported. The Portuguese Prime Minister Sebastião de Carvalho—later better known as Marquis of Pombal (1699–1782)—who also owned vineyards in the Douro valley, agreed with them (Francis, 1972, p. 2012; Maxwell, 1995, p. 62). In 1756, Pombal introduced a series of regulations on Port wines.¹⁶ He established “*The General Company of Agriculture of the Vineyards of the Upper Douro*”¹⁷ (the Douro Company) with the principal aim to “*uphold the reputation of the wines, the culture of the vineyards, and to foster at the same time the trade in the former*”.¹⁸ The Douro Company set the geographic boundaries (the ‘*terroir*’) in which Port wines could be grown and named it the “Douro Delimited Region” (DDR) (*Região Demarcada do Douro*) (Figures 4 and 5). Interestingly, as one of the first geographical indications in the world, the Douro DR *terroir* was demarcated by 355 stones (Companhia Geral da Agricultura das Vinhas do Alto Douro, 1756).¹⁹ The Douro DR was dominated by large noble vineyard owners and wine producers of the Douro valley who reacted enthusiastically to Pombal’s

¹⁶ The request for protection was made even more urgent following the 1755 earthquake that killed 40,000 people and almost completely destroyed Lisbon (Johnson, 1989, p. 228).

¹⁷ The Douro Company was composed by one president, twelve deputies and one secretary, appointed for a period of eight years. In addition, there were six counselors who were experienced wine traders. The ombudsman and the deputies had to have Portuguese nationality and to be residents in the city of Porto or in the territory of Alto Douro (Fernandes, 2002). Beleza de Andrade and Mansilha became officials of the Douro Company and Beleza de Andrade became the first President in 1756 (Maxwell, 1995, p. 62).

¹⁸ Translation by the authors: “*Sendo o principal objecto desta Companhia sustentar com a reputação dos Vinhos a cuitura das Vinhas, e beneficiar ao mesmo tempo o Commercio*” (Companhia Geral da Agricultura das Vinhas do Alto Douro, 1756, p. 7).

¹⁹ Pombal and Mansilha established the first delimitation guidelines and, between 1756 and 1761, three commissions (1757, 1758 and 1761) established the final boundaries delimited by 335 stones markers. Remarkably, about a third of these “Feitoria” stones remain standing today (Figure 5; Maxwell, 1995, p. 62).

regulation as the Douro Company's statutes were largely based on their specific interests and excluded the small and "less noble" vineyards. As John Croft (1787, p. 12) annotates, the borders included "*the vineyards only of the principal gentry and religious houses, excluding those of the menial vintagers and farmers, rendering these last forever incapable of producing wines for English transportation.*"

[Insert Figure 5 here]

The Douro Company further regulated the production and trade of Port wines by controlling quantities, fixing minimum and maximum prices,²⁰ and by setting "quality" standards. Port wines were divided in two categories: the "Factory wines" for export (which were the highest quality wines which fetched higher prices) and the "branch wines" (*vinhos de ramo*) for home consumption. Every year the Douro Company officials (tasters) decided whether Port wines could be considered "Factory" wines (and exported) or not. They also fixed wine prices that both the Douro wine growers and the British wine merchants had to accept (Bradford, 1969, p. 52; Ludington, 2013, 2017; Simpson, 2011, p. 165). The Douro Company held a monopoly on wine trade to all nations (including the Portuguese colony of Brazil) except on exports to Britain which were still controlled by British wine merchants.²¹ But Port wines exported to Britain could only be

²⁰ The statutes of the Douro Company established "*a regular price for the advantage alike of those who produce and who trade in them, avoiding on the one hand those high prices which, rendering sales impossible, ruin the stocks, and on the other such low prices as prevent the growers from expending the necessary sum on the cultivation of their vineyards.*" [Translation by the authors. "*estabelecendo para elle hum preço regular de que resulte competente conveniência aos que fabricão, e respectivo lucro aos que neile negoceão, evitando por huma parte os preços excessivos , que impossibilitando o consumo arruinão o género, evitando pela outra parte, que este se abata com tanta decadência, que aos Lavradores não possa fazer conta sustentarem as despesas annuaes da sua agricultura*"]. (Companhia Geral da Agricultura das Vinhas do Alto Douro, 1756, p. 7).

²¹ In 1777, the British wine merchants still controlled almost 80 percent of the exported Port wines (Duguid, 2005). By 1840s, the British companies accounted for two-third of exports to Britain but only represented one out of ten companies that traded with Brazil (Simpson, 2011, p. 165).

wines from the delimited Douro wine region that had been approved for export as “Factory” wines (Ludington, 2009; Schneider, 1980).²²

Finally, to prevent any further competition from outside the Douro DR two radical measures were introduced. First, in 1776, Pombal introduced a complete ban on exports of wine from cities as Viana, Monção, Bairrada and the Algarve, located outside the delimited Douro wine region (Mayson, 1999, p. 16). Second, to prevent blending, the vineyards outside the official Douro wine producing region were grubbed up by the authorities and the land was reconverted for the production of corn.

In summary, wine trade with Britain played a key role in the introduction of one of the world’s first GIs. It turns out that this was not only the case in Portugal, but also in Italy. However, before discussing this, we will explain how the original Port GI expanded to today’s Douro DOC region.

Expansion of the Port GI: The US War of Independence and A Perfect Storm

The 1756 Port GI region was expanded twice. The first expansion occurred after 30 years (in 1788–1793); the second another 120 years later (in 1907). The changes in the Port *terroir* are summarized in Table 2 and illustrated in Figure 5.

[Insert Table 2 here]

²² Many wine historians argue that these regulations (and the installation of the Douro Company) led to a higher quality of Port wines as it banned the use of elderberries in Port wines production, it prohibited the blending of delimited Port wines with wines from outside the zone and it banned the use of low quality brandy (Enjalbert, 1953, p. 466; Bradford, 1969, p. 53; Johnson, 1989, p. 229; Unwin, 1991, p. 266). The Douro Company prohibited the growth of elder trees within the delimited Douro region. The Douro Company also enjoyed exclusive rights to distil and sell brandy in northern Portugal and to supply wine to the taverns of Porto. It is argued that this brandy monopoly ensured that only high quality brandy was added to the wines, leading to higher quality Port wines (Johnson, 1989, p. 228; Jennings, 2016). Only one author claims that the Douro Company did not increase the quality of Port wines: Francis (1972).

The first expansion followed a change in the political power structure and an increase in demand for Port wines. In 1777, Dona Maria I (1734–1816) became Queen of Portugal and she immediately dismissed Pombal from power. She relaxed some of the wine regulations and reduced the monopoly of the Douro Company over the sale of wines. As a result, winegrowers in the neighboring areas of the delimited Douro region started to produce and sell their wines. However, they could still not (legally) sell their wines in Britain (IVDP, 2004; Freire Costa et al., 2016, p. 177; Mayson, 1999, p. 16).²³

What changed this was an increase in British demand for Port wines. The increased demand came from British soldiers fighting in the United States War of Independence (1775–1783). Unlike most other wines, fortified Port wines could be shipped overseas to North America to the British troops.²⁴ However, the “Factory Port wines” (which were the only wines allowed to be exported) could not meet this increased demand (Cardoso, 2013, p. 81; Tenreiro, 1942, p. 286). In 1788, after a poor harvest, Queen Maria ordered to “provisionally” allow to ship “non-Factory” wines to Britain and ordered to “identify” vineyards that produced wines of the same “kindness and qualification” as the ones produced within Douro delimited region (IVDP, 2004; Guerner, 1814, p. 35).²⁵ The delimiting process took five years and, in 1793, the original 1756 Douro delimitation (“*Demarcação Primordial*”) was extended (“*Demarcação Subsidiária*”) (Fonseca, 1996, p. 27; Pereira, 1997; Vilarinho de São Romão, 1883, p. 141). While the extension was only to last as

²³ According to Vilarinho de São Romão (1883, p. 142) these “non-Factory” wines were generous wines, grown in the areas grubbed up by the authorities in 1773.

²⁴ There are interesting parallels with the French wine market in the nineteenth century which was mostly characterized by high demand. This was due to the Napoleonic Wars that lasted from 1803 to 1815. The wars required a continuous supply of food and drink for an army of many hundreds of thousands of soldiers. Demand for wine was high because wine was still a safer drink compared with water and it was used to “fuel” the soldiers in the battles (Meloni and Swinnen, 2016b).

²⁵ The deputies responsible for the subsidiary demarcation were José de Oliveira Barreto, vice-president of the Douro Company's Board of Directors, Domingos Martins Gonçalves and Francisco Baptista de Araújo Cabral Montes (Fonseca, 1996, p. 27).

long as “*experience and public utility prove to be useful*” and was to be cancelled as soon as it “*appear to be detrimental to the trade (...) of the said wines*”, the “temporary” extension became permanent and significantly enlarged the Port GI (IVDP, 2004).

The 1788 Douro delimitation remained unaltered for more than a century. Then, major changes in the late nineteenth century caused another expansion of the Douro delimited region in 1907. It was the result of three factors: changes in transport infrastructure (expanded Douro river navigability and the expansion of the railways in northern Portugal), the arrival of the deadly vine bug *Phylloxera* and a period of liberalization—a “perfect storm”. Port wine was transported from the vineyards in the Douro valley to the city of Porto by boats on the Douro river. There was a natural barrier to expansion towards the east: the Valeira gorge (*Cachão da Valeira*), a narrow valley with steep and rocky walls. The Valeira gorge prevented the transport of wine and products to either side of this point (see Figure 5).²⁶ As a consequence, there were almost no vineyards in the area east of the Valeira gorge (Tenreiro, 1942, p. 52).

Two major public infrastructure investments removed this transportation constraint. Between 1780 and 1792, the rocks of the Valeira gorge were demolished, rendering the river Douro navigable further to the east (until Spain). This stimulated new vineyards investments east of the Valeira gorge (Barros, 2008; Unwin, 1991, p. 21). A century later, the construction of the Douro railway line (1873–1887) further favored the expansion of vineyards eastwards of the Valeira gorge. The completion of the railway along the Douro river in 1887 meant that the Douro river was no longer the only means of transporting wine from the hinterland to the coast (Pereira, 2008).

²⁶ It was extremely difficult and dangerous to navigate the Douro river, as natural obstacles to navigation (rapids or rocks) were numerous. Although the first attempts to remove these natural obstacles were made in the sixteenth century, it was only during the eighteenth century that major works were carried out (Barros, 2008).

However, the expansion of vineyards eastwards of the Valeira gorge remained limited until two other major events occurred: a liberalization of economic regulations and the arrival of *Phylloxera*.

In 1865, as economic liberalizations spread across Europe, a “free trade” regime was established in Portugal. The Douro Company was dissolved and wine regulations, including the Port wine GI, abolished.²⁷ The liberal regime lasted for about forty years and allowed the expansion of vineyards outside the delimited Douro wine region (Pereira, 2008; World Heritage Committee, 2001, p. 37). Around the same time, *Phylloxera* arrived. It first arrived in Southern Portugal and then moved north, devastating the vines in the Douro valley.²⁸ Port wines became scarce and prices increased. This encouraged winegrowers to replant with new American graft-resistant (more productive) vines (Robinson and Harding, 2015; Simpson, 2011, p. 168).²⁹

As a consequence of the liberal regime, the higher production of the winegrowers outside the original Douro valley and lower transport costs due to the Douro river extension and the construction of the railway, Port wines were now produced in a much larger region. In 1887, the original Port wine producers formed a new pressure group, the League of Douro Farmers (*Liga dos Lavradores do Douro*), to pressure the government to prevent the new producers from labelling their wine as “Port” wines (Liga dos Lavradores do Douro, 1887). However, they were not

²⁷ In 1834, at the end of the Portuguese civil war (1828–1834), the Douro Company was (briefly) dismantled and, four years later, it was reintroduced for another twenty years, until 1852 (see Table 3). Over the centuries, other regulatory bodies were reestablished: the Regulatory Commission for Agriculture and Trade of the Wines of the Upper Douro (*Comissão Reguladora da Agricultura e Comércio dos Vinhos do Douro*) in 1852, the Royal Wine Company of the North of Portugal (*Real Companhia Vinícola do Norte de Portugal*) in 1889, the Port Wine Institute (*Instituto do Vinho do Porto*) in 1933 and the Douro and Port Wine Institute (*Instituto dos Vinhos do Douro e do Porto*) in 2003 (Dobby, 1936; Duguid, 2005; Simpson, 2011, p. 167).

²⁸ While *Phylloxera* was devastating vineyards on the eastern area of the Douro, John Fladgate (a port wine merchant and later Baron), traveled to France to seek for solutions and, in 1872, published his findings in an open letter the Douro winegrowers (Roêda, 1872).

²⁹ The winegrowers how could not replant with grafted-resistant vines either migrated or planted other crops as olives (Unwin, 1991, p. 21).

successful. In 1907, a new delimitation expanded the Port GI region from 40,000 to 200,000 hectares and moved the borders further east, reaching up to the borders of Spain (see Figure 5).

Wine producers south of the Douro valley also lobbied to be included. They proposed to expand the Port GI to 400,000 hectares. However, they did not succeed and remained excluded. They were “compensated by brandy”: the compromise with the southern growers was that brandy for fortifying wines could only be produced in their region—outside the Douro DR (Simpson, 2011, p. 168; Sousa, 2006).³⁰

The 1907 Port GI region has remained largely unaltered and coincides with what is today the Douro Denomination of Origin (*Denominação de Origem Controlada*, DOC) region.³¹ The historical hearth of the Douro DOC region, determined by the 1756 regulation, is today in the east of the current DOC region (see Figure 5).

3. The Delimitation of Chianti Wine³²

*“At the beginning of this century, due to the trade that the Chianti province had with Britain, the price of wine was four or five times over the ordinary price, and there was no hill, mountainous or rocky, that with iron or with fire was not crushed to plant the vines.”*³³

Sallustio Antonio Bandini, 1775, p. 58

³⁰ Between 1907 and 1913, seven other wine producing regions in Portugal were granted a GI (*Região Demarcada*): Bucelas, Colares, Carcavelos, Dão, Madeira, Moscatel de Setúbal and Vinho Verde (Freire, 1998).

³¹ The total area that exists today corresponds to the one established by two successive laws (1921 and 1986), which in turn are based on the law of 1907 (IVDP, 2017).

³² This part is based on extensive archival research, conducted between 2010 and 2011 at the Biblioteca Nazionale Centrale di Roma (Rome, Italy); the Biblioteca Nazionale Centrale di Firenze (Florence, Italy); the Archivio di Stato di Firenze (Florence, Italy); the Accademia dei Georgofili (Florence, Italy); the Archivio di Stato di Siena (Siena, Italy); and the Archivio di Stato di Livorno (Livorno, Italy). We will use, in particular, the “Archivio Ricasoli” (Filza 60 e 61) and the “Manoscritti Magalotti” from the Archivio di Stato di Firenze (Florence State Archives).

³³ Translation by the authors. “*Quando dopo il principio di questo secolo il prezzo de Vini per lo spaccio che aveva nell’Inghilterra quello della provincia di Chianti, era quattro o cinque volte sopra il prezzo ordinario dei nostri tempi, non v’era poggio sì alpestre, o sassoso, che o col ferro o col fuoco non si stritolasse per piantarvi le Viti*”.

Two thousand years ago, Ancient Rome was the center of wine trade. In his *Naturalis Histories*, one of the first scientific encyclopedias, Pliny the Elder (23–79 CE) writes that “(...) *the vine, the superiority in which has been so peculiarly conceded to Italy, that in this one blessing we may pronounce her to have surpassed those of all other nations of the earth.*”³⁴ However, the self-proclaimed ‘superiority’ of Italian wines disappeared together with the collapse of the Roman Empire five hundred years later.

It takes roughly a thousand years before the reputation of Italy as a wine producer and exporter starts to recover—but now with Tuscany as the heart of Italian wine trade. During the fifteenth century, Florence and Siena were the main wine markets. Per capita consumption was about 1 to 2 liters per day and Tuscany itself was producing around 140,000 hectoliters of wine per year (Melis, 1972; Turrini, 2005). Wines were imported from Naples, Corsica, Liguria, Rhodes and Romania (Balestracci, 1988). During the seventeenth century, there was a major expansion of vines in Tuscany, triggered by several factors (Rombai et al., 2000; Pult Quaglia, 2007, p. 55). A drop in wheat prices and an increase in demand for wine made investments in wine more attractive.³⁵ In addition, the introduction of sharecropping as an institutional innovation reduced labor supervision costs and increased the profitability of vineyards investments (Emigh, 1997). However, until the late seventeenth century, there were very few wine exports because (a) export demand was limited due to the poor reputation of Italian wine abroad and (b) because wine

³⁴ “*Unde autem potius incipiamus quam a vitibus quarum principatus in tantum peculiaris Italiae est, ut vel hoc uno omnia gentium vicisse etiam odorifera possit videri bona, quam ubicumque pubescentium odori nulla suavitas praeferatur?*” (Pliny the Elder, AD 79, Book XIV, Chaps. 1 & 2. (1.)). Translated in English by ed. John Bostock.

³⁵ During the seventeenth century, investments in wine included the planting of specialized vineyards (and the conversion from wheat to vine), the building of large villas and the introduction of money-wages (and not wine-wages) (Bonelli Conenna, 2000). At the same time, relevant studies of agronomists—such as Davanzati Bostichi, Soderini and Magazzini—were published on the cultivation of vines in Tuscany (Melis, 1972).

regulations in the Granduchy of Tuscany forbade the export of Tuscan wine (see Table 3 for details).

[Insert Table 3 here]

The factor that triggered wine exports from Tuscany was the same that stimulated Port wine exports: the collapse of French wine exports to Britain with the British-French war and the increase of British tariffs on French wine. After the outbreak of the war in 1688, there was increasing pressure in Tuscany to remove the ban in order to seize this opportunity to replace French wines. This is well illustrated by a letter from Lorenzo Magalotti—Florentine count and diplomat (1637–1712)—who advised to profit from the wars between France and Britain in order to expand Chianti wine sales in the English market: “*We must not miss the present war conjuncture between England and France (...) We must remember that the British love red and dry wines, so Chianti (...) would be the most appropriate to trade (...). To prevent fraud that could discredit the trade (...) trustworthy people have to oversee the wines*”.³⁶ In 1698, ten years after the start of the British-French war, the Grand Duke of Tuscany, Cosimo III de' Medici (1642–1723), removed the wine export ban in order to seize the opportunity to enter the British market (*Bando per la Facoltà di stillare Acquavite*) (Rombai, et al. 2000; Nesto and Di Savino, 2016). The impact was immediate and strong: Italian wine exports to Britain increased from 300 hectoliters of wine in 1675 to almost 13,000 hectoliters after the lifting of the export ban in 1698 (from 0.2% to 8% of the total imported wines in Britain) (Table 1). While there are no good statistics on this, several letters report that wine exports to other rich northern European regions, in particular Holland and Flanders, also

³⁶ Translation by the authors. “(...) *Non bisognasse perdere la congiuntura della guerra che è presente tra l’Inghilterra e la Francia (...) Bisogna però ricordarsi che gli Inglesi amano i vini rossi, e asciutti, onde il Chianti (...) saranno i più propizi per il commercio (...). Per prevenire le frodi che potrebbero discreditare il negozio (...) servono persone di fede per sovrintendere ai vini (...)*” (Manoscritti Magalotti, Archivio di Stato di Firenze). See Appendix 2 for an illustration.

grew. For instance, in the “*Lettere del Cavalier Agostino Perke Goedart da Londra*” dated June 1722, a Flemish merchant, refers to the good quality of Brolio’s wine from Chianti and asks to send him more: “*I am sorry I had (wine) of so little quantity, because (...) I had more requests than wine available, so do not send me never less than 10 cases at a time*”.³⁷

Almost all of the Italian wine exports came from Tuscany. Initially, Tuscan wines exported to Britain were produced by Florentine landowners who were also powerful merchants. They owned large vineyards and castles situated in the area between Siena and Florence³⁸ and belonged to the Florentine aristocracy (the Patricians).³⁹ They included the Antinori, Marchesi de’ Frescobaldi, the Ricasoli and da Verrazzano—wine families that still produce some of the most renown wines in Italy today (Bonelli Conenna, 2000).⁴⁰

[Insert Figure 6 here]

The wine was known as Chianti wine, referring to, at that time, the Chianti area located between Siena and Florence in Tuscany (see Figure 6).⁴¹ Numerous letters of wine merchants based in London document that a ‘true’ Chianti wine was a wine that was able to travel (“*did not turn sour*”), that was coming from the land of established powerful Florentine landowners (as Ricasoli’s Castle in Brolio) and that accommodated to the taste of English consumers (heavy dry

³⁷ Translation by the authors. “*quello che posso dire è che mi dispiace d’averne avuto sì poca qualità, perché (...) ho avuto più richieste che vino, non mi mandi mai meno di 10 casse per volta*.” (Filza 61 of the Ricasoli Archive, *Archivio di Stato di Firenze*).

³⁸ See Emigh (1997) for an analysis of the political economy in late medieval and early modern in Tuscany and the active role of the urban merchants that used sharecropping to diversify their portfolio and invest on agriculture. For our analysis, it is also important to underline that Florence was, at that time, the political and economic center of Tuscany, attracting capital and trade, and merchants were therefore extremely powerful.

³⁹ Litchfield (1969) underlines the fact that these aristocratic families were still the ruling class in Florence and, as “citizens”, they were allowed to be elected in the Senate and held important positions in the government.

⁴⁰ Federico Melis (1972) also evidences the presence of British and Italian importers by analyzing the accounts of Pier Giuseppe Migliorini, who, in 1699, made a list of wines sold in London, and Chianti appears in it.

⁴¹ The first accounting record mentioning “Chianti” as a separate Tuscan wine was registered in 1394—even though it was still produced as a white (and not a red) wine (Melis, 1972).

red wines). Our archival research (in the Ricasoli Archive, *Archivio di Stato di Firenze*) found numerous handwritten letters (from Italian and foreign merchants based in London) on wine trade between Tuscany and Britain referring to the quality of Tuscan wine and repeatedly complaining about the bad quality of other wines that arrived in London.⁴² In a letter from 10 April 1709, Niccolò Mucotti, an Italian merchant based in London, thinks the quality is so good that he hopes to sell Ricasoli's wine from Chianti at least at £200 (Mucotti was selling its other red wines at £5 per case on average).⁴³ Also letters from merchants in Holland and Flanders refer to the quality of Chianti wines.

However, as in the Douro region, also in Chianti the party did not last forever. Other wine producers tried to enter the profitable trade with Britain. In particular, wine producers located in other parts of Tuscany and not belonging to the Florentine aristocracy started to export wines to Britain. These new wine exports undermined the Florentine landowners trade profits and the latter claimed that the newcomers used 'false' Chianti wines (labelled and sold as Chianti but produced in other parts of Tuscany) and affected the (perceived) reputation of all Chianti wines and their prices on the British market.

⁴² For instance, Raffaello and Moise Ergas, two merchants of Livorno, asked for a reimbursement of the damages derived from acquiring wine that is not Chianti. In a letter dated 5 March 1706, the merchants stated that they needed "*to provide 200 cases of Chianti red wine from the Brolio winery (...) and above all that your wine is Chianti (...) so that it can be honored with friends in London, which will be of great benefit*" [Translation by the authors. "*di provvederci le 200 casse vino rosso di Chianti alla sua Cantina di Brolio (...) e soprattutto che il suo Vino sia Chianti e d'ogni squisitezza da poter navigare (...) che possano avere onore con gli amici di Londra, che le assicuro sarà di gran beneficio*"]. In a letter dated 13 July 1706, the same merchants asked for 'true Chianti wines': "*which according to the agreement and the word given (...) that they were true Chianti from the Cellar of Brolio and of all extreme goodness and perfection.*" [Translation by the authors. "*che secondo l'accordo e parola che ci diede (...) che erano di Chianti vero della Cantina di Brolio e da ogni estrema bontà e perfezione*"]. (Filza 60 of the Ricasoli Archive, *Archivio di Stato di Firenze*).

⁴³ Translation by the authors. "*con speranza di poterlo comprare a miglior mercato (...) non posso ottenerlo sotto le £200*". Numerous accounting records attest the presence of Chianti wine presence in Britain. Niccolò Mucotti uses credits and debits from the double-entry accounting and traces the prices of cases of wine, the custom duties, the cost of storage and transport. Another merchant, Migliorucci (Ricasoli's cousin), carries out a long calculation on "*Wines sold in London–May 1699*".

With their profits from the British market under threat, the powerful Florentine landowners started lobbying the government to intervene. The Florentine vineyards owners and wine merchants pressured the Grand Duke Cosimo III to impose restrictions on “Chianti wines” and to protect “Chianti’s reputation” (along with their profits)⁴⁴ by distinguishing “Chianti wine” from other wines. The Grand Duke Cosimo III himself owned several vineyards in the Chianti area (mainly located in Castello, Artimino, Ginestre and Carreggi).⁴⁵ In 1716, he issued two edicts that delimited the boundaries of the Chianti wine growing area and regulated the wine trade through control and fraud repression measures. The first edict (“*Bando Sopra la Dichiarazione dé Confini*”)⁴⁶ stated that only producers located in four areas of Tuscany that included the townships of Castellina, Gaiole, Greve and Radda⁴⁷ could use the name “Chianti” for their wines. Importantly, the delimited area excluded the Republic of Siena—Florence’s major political and economic rival in Tuscany, and Italy (Casabianca, 1908; Flower, 1978).⁴⁸ The Siennese families were effectively eliminated from the profitable European wine trade and could only sell their wines

⁴⁴ Political interventions in the district of Chianti were not new. During the fifteenth century, wine sale was heavily taxed and was one of the most profitable city revenue source. Moreover, the harvest date was fixed (at 29th of September) and wine quality was ensured through seals affixed by the officers in charge. Producers were complaining that “*what a great damage the Lega endures, because wines are not good enough and they cannot be sold on time*” [Translation by the authors. “*che grand danno ne riceve la Lega, perché non possono essere buoni i vini et non si posson poi al tempo vendere*”] (Melis, 1984). See Table 4 for a detailed chronology of the Medici’s regulations on wine throughout the centuries.

⁴⁵ Moreover, he sent his own wine as a gift to allied rulers in Britain, France, Spain and Holland. In Britain 146 cases of wine were sent in 1672, 166 in 1675 and 80 barrels at the end of the 1690s. While in France the trend was increasing, starting with 5 cases of wine in 1672 and achieving 52 in 1674 and 148 in 1699 (Imberciadori, 1953; Rombai, et al. 2000).

⁴⁶ Chianti was not the only wine region that was defined, the edict also delimited the borders of three other regions, i.e., Pomino, Carmignano and Val d’Arno di Sopra.

⁴⁷ See Figure 6 and Appendix 1, extract 1 (In: Cantini, 1806, Tomo XXII, pp. 203–205).

⁴⁸ In the fourteenth century, because of the continuous conflicts between the Republics of Florence and Siena over their borders, the *Lega del Chianti*, League of Chianti, that included the three townships of Castellina, Gaiole and Radda, was created as an autonomous territorial jurisdiction by the Florentine Republic with the purpose of defending its *contado* from any possible assault from Siena. In 1384, the League of Chianti chose a black rooster in gold field as emblem, the same symbol is nowadays used as the logo of Chianti Classico (Flower, 1978).

domestically (Bonelli Conenna, 2000, p. 82–83).⁴⁹ This was the first legal document defining the boundaries of a wine production zone—and also the first GI—in Italy.

The second edict (“*Bando Sopra il Commercio del Vino*”) established a Board (the *Congregazione*)⁵⁰ that controlled wine production, its shipment, trade and the possible frauds—the equivalent of the present Chianti Consortium (*Consorzio*).⁵¹ The *Congregazione* was composed of 16 members, all of which were large Florentine vineyard owners (Bonelli Conenna, 2000, p. 82).⁵² The result of the two edicts was the confirmation of the historical political Florentine alliance and the capture of rents from trade by the Florentine vineyards owners.

The 1932 Expansion of the Chianti GI

The original Chianti GI was in place for 170 years before it was officially enlarged. However, the enforcement of the GI was problematic for most of this period and effectively most “Chianti wine” was sold from outside the official Chianti GI region. There were several reasons for this and, as in the case of the Port GI, changes in political power, infrastructure investments and in demand for Chianti wine played an important role.

⁴⁹ In the following years, Siena witnessed a multiplication of trials where many Sienese families attempted to avoid payment of fines related to the trade of false “Chianti” wines (Bonelli Conenna, 2000, p. 84).

⁵⁰ The *Congregazione* can be considered as the precursor to the current *Chianti Consortium* that was established in 1924 with the aim of protecting (through test laboratory and technical inspection) and valorizing (through marketing) ‘Chianti Classico’ wine and trademark (Brachetti Montorselli, 1999).

⁵¹ See Appendix 1, extract 2 (In: Cantini, 1806, Tomo XXII, pp. 203–205).

⁵² Bonelli Conenna (2000) lists all the members of the *Congregazione*: “il marchese Francesco Riccardi Proposto permanente, il Monsignor Spedalingo di S. Maria Nuova vice Proposto eletto dalla Congregazione per tratta per il mese di luglio, il Monsignor Spedalingo di S. Maria degli Innocenti, il duca Anton Maria Salviati, i senatori marchese Lodovico Tempi, Niccolò Ginori e Giovan Battista Guadagni, i marchesi Priore Luca Casimiro degli Albizi (Segretario), Francesco Maria de Medici, Bernabò Malaspina, Filippo Strozzi Squarcialupi e Antonio della Rena, il barone e capitano Bettino Ricasoli, il cav. Cosimo Venturi, Bartolomeo Ugolini e Ottavio Landi”.

The power of the original Chianti *Congregazione* declined first when the Medici regime ended in 1737 and came to a definite end when Napoleon invaded in 1799 and liquidated the old power infrastructures (Patchell, 2011; Rezoagli, 1965; Righi Parenti, 1980; Tognarini, 1994).⁵³

As in the Douro valley, the construction of a railway changed the comparative advantage in wine production and trade of neighboring regions. In 1849, the construction of the Siena-Empoli railway line (called *Leopolda* line), connected wine producers from Siena region to the port of Livorno, but not traditional Chianti producers from the Firenze region. Soon producers from around Siena started exporting “Chianti wines” (Catoni, 1981; Del Pane, 1971; Nesto and Di Savino, 2016).

The demand for Chianti wine was volatile in the late nineteenth and early twentieth centuries. In the mid-nineteenth century, US demand for Chianti increased with Italian migration. Demand from France and Britain increased with *Phylloxera* destroying French vineyards in the 1870–1890 period, stimulating “Chianti” exports from all over Tuscany. However, by that time, the US had started imposing import tariffs on Italian wines and Italian immigrants had started the production of “Chianti” in California, competing with Italian Chianti on the US market.⁵⁴ In addition, the recovery of French wine production after 1900 led to high import tariffs on Italian wines, effectively destroying most of Italian export markets (Cinotto, 2014; Federico and Martinelli, 2018; Gumina, 1993; Mocarrelli, 2013).

All this triggered major discussions in the 1920s and 1930s (after World War I) on the Chianti GI. In 1932, a government commission officially expanded the Chianti GI area to the

⁵³ Napoleon’s first military success was the invasion of the northern part of Italy in 1796 and the consequent withdrawal of Austria. After having created the northern Cisalpine Republic, he went further south and arrived to Tuscany (Tognarini, 1994).

⁵⁴ For instance, the marketing strategy of the Italian-Swiss Agricultural Association consisted in producing well-identifiable Italian products as the “Tipo Chianti” wine, a red table wine bottled in traditional “fiasco” (the straw-covered glass flask) (Cinotto, 2014, pp. 160-61).

whole of wine-growing Tuscany. Seven subzones were created (see Figure 6). One of the seven subzones was named “Chianti Classico” and included the four towns delimited by Cosimo III in 1716 (Castellina, Gaiole, Greve and Radda) and five other parts as San Casciano in Val di Pesa and Barberino Val d’Elsa. Since then the Chianti GI borders have not changed anymore (Brunori and Rossi, 2007). In 1967, both “Chianti” and “Chianti Classico” obtained the Appellation of Origin (“Controlled Denomination of Origin”, *Denominazione di Origine Controllata*—DOC) status, with more stringent rules for the latter.⁵⁵

4. The Delimitation of Burgundy: A Proto-GI in the fifteenth century

As in Chianti and Porto, the delineation of the Burgundy wine region was determined by conflicts over trade among wine producers, but in this case it was domestic trade that was crucial. Today’s Burgundy wine region in north eastern France is composed of several sub-regions. The most famous ones are *Côte de Nuits* and *Côte de Beaune*. They compose the heart of the Burgundy wine region (called the “Côte d’Or”) (see Figure 8). In the Middle Ages, wines produced in the “Côte d’Or” were considered equivalent to the prized Falernian wines of Ancient Rome (Lavalley, 1855). Wine from the “Côte d’Or” region was mostly traded to northern European cities,⁵⁶ and to Avignon where the “Avignon Papacy” had settled in 1309. The Pope’s entourage loved Burgundy wines and “Côte d’Or” wines were sent to Avignon through the Rhône River (see Figure 7).

⁵⁵ The Italian highest quality level (“Controlled and Guaranteed Denomination of Origin”, *Denominazione di Origine Controllata e Garantita*—DOCG) was given to “Chianti” in 1984, with “Chianti Classico” considered a sub-denomination of the “Chianti” DOCG. In 1996, the “Chianti Classico” became a separate DOCG, allowing for different regulations in the two areas (Brachetti Montorselli, 1999).

⁵⁶ When Philip the Bold, Duke of Burgundy (1342–1404), married Margaret of Flanders whose dowry included the rich northern regions of Flanders and Brabant—partially overlapping with today’s Belgium—these regions and their wealthy cities created a new market for Burgundy wines (Heers, 1963; Van Nieuwenhuysen, 1990).

[Insert Figure 7 here]

Wine producers in the north-western part of the Burgundy region, with their vineyards around the city of Auxerre, sold their wines to Paris since they were close to the Yonne and Seine rivers which provided cheap wine transport from Auxerre by boat to Paris. The wines produced around the city of Auxerre were therefore the only “Burgundy wines” that were traded to Paris (Dion, 1959, p. 286; Rose, 2011, p. 44).

[Insert Figure 8 here]

However, with Paris and its wine market growing in the fourteenth century, wine producers in the “Côte d'Or” set their eyes on this growing market, especially with Kings and nobility located there potentially providing an important market for their higher priced wines. Soon after, Burgundy wines from “Côte d'Or” became the wine of the nobles and the kings, the wine used to celebrate the coronation of Charles IV in 1321 and that of Philip VI in 1328 (Dion, 1959). However, increased trade competition between the two Burgundy regions created conflicts over the name of “Burgundy wines”. While “Côte d'Or” producers enjoyed growth of demand for their high priced wines in the Paris markets they were increasingly concerned that (what they claimed to be) lower quality “Burgundy wines” from the Auxerre producers was undermining quality perceptions of the overall Burgundy brand—and presumably also capturing some of the demand for Burgundy wines overall. Wine producers from the “Côte d'Or” (Beaune) insisted that the “lower quality” wines from the Auxerre region could no longer be called “Burgundy wines” (Dion, 1955; Labbé, 2011; Richard, 2001).

Ultimately, the King Charles VI of France, residing in Paris where the Burgundy wine from both regions was consumed, decided the issue. His 1415 royal edict stated that to “*obviate the*

*frauds, crimes, deceptions, and abuses that could be made*⁵⁷ and defined “Burgundy wine” as “the wines grown below the bridge of Sens,⁵⁸ both those in the area of Auxerre and those in the area of Beaune” (Delafosse, 1941, p. 209).⁵⁹ With this royal decree, Auxerre producers could continue to sell their wines as “Burgundy wines”. The geographic delineation of Burgundy wines was decided in 1415, arguably the first clear delineation of a *terroir* in history.

Interestingly the oldest *terroir* seems to have been the most persistent. Today’s Burgundy wine region is located in the Burgundy *terroir* as specified by King Charles VI in 1415. It stretches from Auxerre to Dijon and Mâcon. However, it should be recognized that the Burgundy *terroir* was the least specific and detailed in its delineation. It merely referred to “bridges” but did not specify exactly the wine growing area. That is also why we referred to it as a “proto-GI”.⁶⁰

⁵⁷ “And to obviate the frauds, crimes, deceptions, and abuses that could be made on goods, commodities, and merchandise, which are daily brought, sold, or admitted into our said city [Paris] (...) and to reform the public good from good to better, and keeping it in good order”. [Translation by the authors. “et pour obvier aux fraudes, cauteilles, decepeions et abuz qu'on en pavoit faire et commettre es biens, denrées et marchandises qui chaque jour estoient arrivées, conduites et amenées pour vendre, despendre, ou adenerer en nostre dicte ville (...) et affin de reformer le bien publique de bien en mieulx, et pour le garder, maintenir et conserver en très-bonne police”] (Jourdan et al., 1825, p. 428).

⁵⁸ The city of Sens is located about 100 kilometers southeast of Paris (see Figure 8).

⁵⁹ Translation by the authors. “(...) et pour savoir la différence du vin françois et du vin de Bourgogne toutes manieres de vins qui seront creuz au dessus du pont de Sens, tant ceux du pays d'Auxerrois comme ceux du pays de Beaunois et d'ailleurs seront appeléz vins de Bourgogne” (La Mare, 1719, Vol. 3, Art VI, p. 684).

⁶⁰ The King used his 1415 edict not only to define “Burgundy wines” but also classified other French wine regions around Paris: the “French wines” (“vins françois”) produced in the Seine river basin surrounding Paris, north of Sens; and the “Loire wines” produced in the Loire valley southwest of Paris (Bazin, 2002, p. 20; Dion, 1959, p. 286; Delafosse, 1941; Jeanton, 1925; La Mare, 1719, p. 684).

5. The Delimitation of Champagne Wine⁶¹

“Although the Portuguese delimitation of the Upper Douro valley under Pombal was the first modern example of vineyard demarcation, it is the French who have developed the most comprehensive system of demarcation for wines based on their places of origin.”

Tim Unwin, 1991, p. 313

“What was champagne? Was it a blend of certain types of grapes? Was it a blend of grapes from an exclusive region? What were the boundaries of that region? How was it delimited and who would demarcate it?”

Kolleen M. Guy, 2010, p. 121

Only 500 years after the 1415 edict by the King of France, a precise delineation of the Champagne terroir would follow. In the seventeenth and eighteenth centuries, “Champagne” wine became increasingly linked to the Marne region, east of Paris (see Figure 7). In the late eighteenth century, there were attempts to further restrict the name “Champagne” by wine merchants in the Marne region. These “Champagne houses” (*Maisons de Champagne*, such as Veuve Clicquot or Moët&Chandon) were producers and merchants of wine (*négociants*) that acquired grapes or wine from the winegrowers (*vignerons*) to make “Champagne” wine under their own label. Their commerce was associated with brand names, strong reputations, and large economic benefits—and was protected by a powerful union, the *Syndicat du Commerce des Vins de Champagne*.⁶² The statutes of the *Syndicat* required that their members (the Champagnes houses) had to buy wine within the Marne department and (to lesser extent) in the Aisne department (Figure 9).⁶³ However,

⁶¹ Haeck et al. (2018) study how the introduction of “Appellations of Origin” (*Appellations d’Origine*—AO) influenced the price of specific wines (including Champagne and Bordeaux) in early twentieth century France.

⁶² The *Syndicat du Commerce des Vins de Champagne* (now called the Union of Champagne Houses, UMC) was established in 1882 by initially twenty-two then sixty (in 1884) large Marne Champagne houses. Even now, two-thirds of the sales and 85% of the exports are done by around 80 Champagne houses, accounting for around 20% of total wine exports in France (Hodez, 1923; Union des Maisons de Champagne, 2017).

⁶³ Marne and Aube are two departments in north-eastern France. The Marne, located north of the Aube, is closer to Paris while the Aube is closer to the Burgundy wine region (see Figure 9).

there was no legal restriction that prohibited other merchants to buy wine from outside the Marne and Aisne departments and label it as “Champagne” (Guy, 2010; Loubère, 1978, p. 315; Niess, 2009). Following the merchants’ example, the Marne and Aisne winegrowers started to organize themselves too. In 1904, they established their own organization: the *Fédération des Syndicats de la Champagne* (now called the *Syndicat Général des Vignerons de la Champagne*, SGV).⁶⁴ Both organizations joined forces to pressure the French government into imposing a delimitation that would exclude wine producers from outside the Marne and Aisne departments (Faith, 1988; Simpson 2011, p. 150; Wolikow, 2009).

A decision over the “Champagne” *terroir* in the late nineteenth and early twentieth centuries was triggered by falling wine prices.⁶⁵ French vineyards were devastated by *Phylloxera* in the late nineteenth century which led to a rapid increase of wine imports (Banerjee et al., 2010; Gale, 2011; Paul, 1996; Tyman, 1879). When French vineyards were recovering, wine prices fell. This crisis induced many complaints of imitations of brand-name wines (to capture higher-value markets), such as false “Champagne” wines or “Bordeaux” wines, labelled and sold as Champagne or Bordeaux but produced in other parts of France (Augé-Laribé, 1950; Bonal, 1984; Stanziani, 2004).⁶⁶

⁶⁴ A previous organization—the *Association Viticole Champenoise* (AVC)—was established in 1898, under the initiative of 24 Champagne houses, to provide funds and information to fight against *Phylloxera* and replant vines (Bonal, 1984; Simpson, 2011, p. 144).

⁶⁵ Many authors analyzed in detail state intervention in the French wine market and the creation of twentieth-century French regional appellations. See, e.g., Lachiver (1988), Loubère (1978, 1990), Meloni and Swinnen (2013), Simpson (2011), Stanziani (2004) and Warner (1960).

⁶⁶ Another “quality problem” were adulterations (to compete with cheap wine imports). Examples of wine adulterations included using wine by-products to maximum capacity (e.g., by adding water and sugar to grape skins, the *piquettes*), producing wine from dried grapes instead of fresh ones, mixing Spanish or Algerian wines with French table wines in order to increase the alcohol content, or adding plaster or coloring additives (e.g., sulfuric or muriatic acids) in order to correct flawed wines. This resulted in several laws in 1905 and 1907 that defined wine, imposed the notification of annual production levels and forbade the addition of water and sugar in wines (JORF, 1905; JORF, 1907a; JORF, 1907b; JORF, 1907c; JORF, 1908; Meloni and Swinnen, 2017; Stanziani, 2004).

Political pressure further increased in 1907 and 1908 when a combination of *Phylloxera*, which started in the south of France and only now had arrived in the Champagne region, and bad weather caused extremely poor harvests. Grape production in the Marne department dropped by more than 70% between 1906 and 1908 (Haeck et al., 2018). While poor harvest normally were compensated by higher prices (due to lower supply) this was not the case in the early twentieth century as wine imports from Spain, Italy and Algeria kept wine prices low—making the impact of bad harvest stronger for winegrowers. In addition, other (often smaller) merchants not belonging to the *Syndicat* purchased wines from outside the traditional Marne (and Aisne) departments, mainly from the Aube department, blend them with Marne wines and sold it as “Champagne wines” (Simpson, 2011, p. 150). The Marne/Aisne winegrowers and Champagne houses which were hurt strongly by the crisis protested against these ‘unscrupulous’ practices.

[Insert Figure 9 here]

In 1908, under pressure from these politically powerful constituencies, the French government decided to restrict the area from which “Champagne” wine could be produced to the Marne and Aisne departments, roughly 15,000 hectares (JORF, 1909a).⁶⁷ This excluded the other departments (as the Aube) which could no longer use the word “Champagne” on their bottles (Comité Champagne, 2017a; Loubère, 1990, p. 114). The 1908 decree establishing the Appellation of Origin (AO) Champagne became the first legally recognized regional delimitation in France.⁶⁸

⁶⁷ The government (the Cabinet of the Minister of Agriculture) appointed a local commission to come up with a proposal. Deputies from the Marne department made up more than half of the commission: there were 28 deputies from the Marne department, 13 from the Aisne and 12 from the Aube department (Wolikow, 2009).

⁶⁸ In the following years, the GIs/*terroirs* of Armagnac, Banyuls, Bordeaux, Clairette de Die and Cognac were also defined. These first “Appellations of Origin” (*Appellations d’Origine*–AO) covered different areas and different types of wines, but all had a long history in wine production (Bonal, 1984; Unwin, 1991, p. 314; Vincens et al., 1911; Wolikow, 2009). Finally, in 1935, a law created the Appellations of Controlled Origin (*Appellations d’Origine Contrôlées*–AOC). This law combined several earlier regulations: it restricted production not only to specific regional origins (through delimitation of specific areas) but also to specific production criteria such as grape variety, minimum alcohol content, and maximum vineyard yields (JORF, 1909b; JORF, 1910; JORF, 1911a). The wine producers were

The 1927 Expansion of the Champagne GI

The government's decision in 1908 that identified the AO Champagne infuriated neighboring wine producers located outside the AO Champagne who argued that their wine was not inferior. Their protests intensified with poor harvests in 1909 and 1910 and resulted in violent demonstrations. In response, in 1911, the government created a second AO called "Champagne zone 2" (*Champagne 2^{ème} zone*)⁶⁹ encompassing the Aube, Haute-Marne and Seine-et-Marne departments (Figure 9; Perron, 2013; Toulemonde Le Ny, 2013).⁷⁰ However, nobody liked this compromise. The AO "Champagne zone 2" wine producers did not consider themselves as "second class producers" and the AO "Champagne" wine producers were opposed to the area enlargement fearing lower prices (Lachiver, 1988; Leszczyńska, 2016; Leroy, 1931; Phillips, 2016; Unwin, 1991).

World War I (1914–18) temporarily suppressed the wine conflict. However, the conflict returned soon afterwards when (in 1919–25) legal proceedings were launched against "unauthorized Champagne producers" in the Aube department who were labeling their wines as "Champagne" (JORF, 1919; Wolikow, 2013). However, the courts ruled in favor of the producers in Aube and argued that these producers "*belonged to the old province of Champagne and met the*

now obliged to respect specific production criteria in order to produce AOC wines, adding "controlled" to the "appellation of origin" concept (Article 19, JORF, 1935; Capus, 1947; Humbert, 2010, 2011; Loubère, 1990; Stanziani, 2004).

⁶⁹ To compensate the large Champagne houses somewhat, further production and marketing regulations were also imposed within the "Champagne zone 1". For instance, in order to benefit from the appellation "Champagne", separate cellars had to be used for Champagne wines [Translation by the authors "*les vins mousseux (...) auront été (...) emmagasinés, manipulés (...) dans des locaux séparés*" (Article 2, JORF, 1911b)]. Moreover, the sparkling wines from Champagne could exit the separate cellars only if bottles were sealed with a label "*carrying the word «Champagne» in very apparent characters*" [Translation by the authors. "*(...) les vins mousseux de Champagne ne pourront sortir des magasins séparés (...) sans que les bouteilles soient revêtues d'une étiquette portant le mot «Champagne» en caractères très apparents*" (Article 3, JORF, 1911b)].

⁷⁰ "*The designated territories constitute a region named «Champagne second zone» entirely distinct from the region «Champagne»*" [Translation by the authors. "*Les territoires désignés constituent une région dénommée «Champagne deuxième zone» entièrement distincte de la région «Champagne»*"] (Article 1, JORF, 1911c).

conditions of origin required by law” (Hodez, 1923). A few years later, the GI was adjusted. In 1927, a law removed the AO “Champagne zone 2” and enlarged the AO Champagne wine region to include the Marne, Aisne, Aube, Haute-Marne and Seine-et-Marne departments.⁷¹ After a 20-year-long fight, the Aube wine producers could sell their wine as “Champagne” (Chappaz, 1951; Comité Champagne, 2017a; Article 5, JORF, 1927; Wolikow, 2009).⁷² An interesting observation is that, by the 1920s, Champagne prices had recovered on the market. While prices were volatile in the 1920s, they were on average considerably higher than in the 1900–1910 period when the lobbying from “Champagne zone 1” producers was very strong (Haeck et al., 2018). This may have contributed to less opposition to enlarging the AO Champagne from zone 1 producers and merchants.

The 1927 delimitation has persisted until today. Almost a century after the final decision of the AO Champagne in 1927, the boundaries of the AOC Champagne have remained largely unaltered.⁷³ During this period Champagne prices have on average been high, supported by the delineation (Haeck et al., 2018).

6. General Insights and Conclusions

The world’s first GIs were in the wine sector and focused on the delineation of the location of production, the ‘*terroir*’. In this paper we have analyzed the causes for the introduction of these

⁷¹ The new area was three times larger than the 1908 delimited area, roughly representing 46,000 hectares. The planted production area within the delimitation was revised in 1951 and reduced to 34,000 hectares (Hodez, 1923).

⁷² However, Marne and Aube wine producers could still produce sparkling wines from foreign wines. A 1934 law prohibited this practice within the delimited wine Champagne region (Article 1, JORF, 1934).

⁷³ Between 1927 and 1930, appointed commissions were responsible for identifying (within the delimited region) the specific production areas (by *communes*) able to produce “Champagne” wines. In 1936, the AOC Champagne was created. Today the production area of the AOC Champagne covers five departments: Marne (accounting for 66%), Aube (23%), Aisne (10%), the Haute-Marne and Seine-et-Marne (Comité Champagne, 2017b; JORF, 1936).

GIs (*terroirs*) and for changes in their delineation (expansion) later on. Our analysis focused on four key GIs. The oldest *terroir* delineation is that of Burgundy wines in the fifteenth century, and its delineation seems to have been the most persistent. Port wines and Chianti wines were among the first to receive a formal GI status (together with Tokay wines from Hungary) in the eighteenth century. Both Port and Chianti GIs were later extended to a (much) larger region. In the early twentieth century, the first introduction of “Appellations of Origin” (*Appellations d’Origine*—AO)—the basis of the more elaborate specification of GIs as we know them today—is the delineation of Champagne. The initial delineation of Champagne in 1908 was soon extended to a larger region, but has since remained unaltered.

Our analysis shows that trade played a very important role in the creation of the ‘*terroirs*’, i.e. the initial delineations, but not always through the same mechanisms for the different cases. Exports and imports of wine triggered conflicts between historical producers of specific wines and new producers. These conflicts included elements of quantity (increased supply causing falling prices) and quality (historical producers claiming that wine from new producers were lower quality and were therefore affecting the consumer perceptions of all wines—a typical asymmetric information-driven Akerlof-lemon-market problem). This is fully consistent with theoretical arguments and empirical studies which identify the combination of both as important elements in the welfare effects and in the political economy of standards and regulations such as GIs (Beghin et al., 2015; Swinnen et al., 2015; Swinnen, 2016). While the quantity (supply) problem seems obvious from the historical documents, it is more difficult to establish whether the quality and consumer perception problems were real or mostly political arguments. However, in the debate and lobbying to influence the governments they were used very prominently.

Trade played a very similar role in the establishment of the Chianti and Port GIs. They are both triggered by the growth in British demand for wine imports following the British-French war in 1688 and following British import tariffs on French wine. With rising profits from exports to Britain (and neighboring regions such as Flanders for Chianti) the production of Chianti and Port wines expands beyond the original vineyards. In both cases, the original vineyards and wine merchants start lobbying their governments because they see their profits threatened by increased supply (quantity) and the uncertain or lower quality of wine from the new vineyards. They argue that this is threatening the collective reputation of all (Port and Chianti) wines. The original producers and merchants pressure the government to intervene and restrict the region from where the “real Port” or “real Chianti” can be produced. In both cases the original producers are successful as the government/ruler introduces a delineation of the GI which excludes “new” producers: in 1716 for Chianti and in 1756 for Port wines.

In Burgundy it is domestic trade, in particular sales to the growing Paris wine market, which triggers the GI. Also here there is a conflict between two groups of Burgundy wine producers and merchants: those around Auxerre and those in the “Côte d'Or”. Initially the Paris market is supplied only by Auxerre producers because they have easier access to the rivers that can transport wine to Paris. “Côte d'Or” producers, although considering themselves of “higher quality”—“the wine of kings and popes”—sell mostly to the rich northern towns (in Flanders etc.) and, using other rivers, south to Avignon, where the Pope and his establishment is residing, creating a profitable market for “Côte d'Or” wines. However, when Paris grows—and with it the local demand for wine, also high quality wine with Kings and nobility located there—“Côte d'Or” producers start sending their wines to the Paris market as well. However, they find that there is already “Burgundy wine” on the market there. The “Côte d'Or” producers claim that the Auxerre

region wine is of lower quality and is undermining the reputation of (their) “real Burgundy”. They want the Auxerre producers to stop referring to their wine as “Burgundy”. The fight is ultimately decided by the King of France and, in 1415, he decides that both regions can call their wine “Burgundy wine”.

The impact of trade on the Champagne GI (or Appellation of Origin, AO) is again different since it’s imports, not exports, of wine that are contributing to the establishment of the Champagne GI. Over the centuries, as the profitability of Champagne production grows and merchants become wealthier, merchants and wine growers of different “sub-regions” organize themselves separately to establish quality brands and reputation. Especially the merchants and wine growers of the Marne region (east of Paris and home of many of today’s globally known “*Maisons de Champagne*”) try to establish themselves as the “real Champagne”—but is still a ‘private’ label by then.

The French wine market is dramatically shaken by the arrival of *Phylloxera* in the second half of the nineteenth century, destroying many vineyards and triggering massive wine imports, and later by falling wine prices with the recovery of French wine production and cheap imports. The crisis hits the Champagne region especially hard after 1900, when *Phylloxera* arrives in the north and when poor harvests (lower supply) are not compensated by higher prices because of imported (Spanish, Italian and Algerian) wines (Meloni and Swinnen, 2016a). The crisis triggers strong lobbying by the Champagne merchants and wine growers in the Marne region to block “false Champagne” and to prevent “lower quality” sparkling wines from neighboring regions to use the name “Champagne”. The lobbying is successful as the government responds by deciding in 1908 to install a Champagne “Appellation of Origin” (or GI) which only includes producers and merchants from the Marne region.

However, the 1908 delineation does not survive long. Almost immediately it is challenged in court by producers from neighboring departments. The legal battles are temporarily halted by World War I, but as soon as the war is over (in 1918) the legal case is resumed and 3 years later (in 1921) the court rules that there is no objective reason to claim that producers from the Aube department have lower quality wines and should be excluded from the Champagne GI. The government follows the court and since 1927 the Champagne GI includes both the Marne and Aisne (so-called “Champagne zone 1”) vineyards and the Aube, Haute-Marne and Seine-et-Marne (“Champagne zone 2”) vineyards and merchants. A factor which may have contributed to this outcome is that in the 1920s the average price of Champaign is considerably above the price in the crisis years of 1900–1910 (Haeck et al., 2018), which may have weakened the opposition of the “Champagne zone 1” producers against the expansion of the GI.

In summary, trade has contributed to the creation of *‘terroir’*, but in different ways. However, the question remains why the “historical producers” (or “insiders” as referred to in Deconinck and Swinnen’s (2014) model) were successful in lobbying the government to restrict the GI for them only in Port and Chianti, but not in Burgundy and only briefly in Champagne. The answer appears to be the link between the historical producers and the political regime (or in other words, the political power structure). In both Port and Chianti, the leaders of the government (Prime Minister Pombal in Portugal and Grand Duke Cosimo III in Italy) owned vineyards in the “historical region”. So they had private benefits in restricting the GI—and obviously very close connections with the historical vineyard owners, all of whom benefited from the strict GI decision.

In contrast, in the Burgundy case, the decision was made by the King of France who resided in Paris and had no vineyards in Burgundy. His and his entourage’s interests were as consumers of wine. Consumers benefit from a higher burgundy supply (thus lower prices), as long as the

potential asymmetric information problems regarding the quality differences of the wine were not substantive. Apparently they were not—at least not in his view. Also in the Champagne GI decisions, it does not appear that the key people in the government had vested interests in either zone 1 or zone 2 vineyards. The Marne (“Champagne zone 1”) merchants were well organized and wealthy and may as such have out-lobbied the “Champagne zone 2” vineyard owners and merchants, the fact that the decision was overturned relatively fast (a few years later—much shorter than in Chianti or Porto) is consistent with the argument that the political power/influence was rather balanced between both groups.

These political connections are also crucial to understand the (lack of) expansion of the initial GIs. In Chianti and Port where there the rulers had (economic and political) vested interests in keeping the GI restricted to the historical production areas, the GI is expanded later after the rulers lose political powers. In both Burgundy and Champagne where that was not the case, later political changes do not trigger changes in the GI.

The expansion of the Port and Chianti GI takes a long time: 216 years for Chianti (in 1932) and for Port there are two expansions: after 32 years (first in 1788) and after 151 years (second in 1907). In both cases the expansions are driven by a combination of factors: (a) a change in the political power structure; (b) a change in the dominant political economic philosophy; (c) infrastructure investments which change the comparative advantage of “new” producers; and (d) shifts in demand. In both cases, the groups with vested interests in the restricted GI lose power in the years after the introduction of the GI. In Portugal, Queen Maria comes to power in 1777 and immediately dismisses Prime Minister Pombal—removing the key political power after the GI restrictions. A few years later, as demand for Port wines increases with British troops fighting in

the US war of independence (and Port wines uniquely fit for traveling long distances), she decides to expand the Port GI significantly in 1788.

The second expansion comes only a century later. This expansion is preceded by major changes in (a) political philosophy (free markets and liberalization of trade and regulations become the dominant philosophy in Europe in the nineteenth century and trigger economic liberalizations in Portugal); (b) in transport infrastructure (the eastern expansion of navigation on the Douro river and new railways significantly reduce transport costs for vineyards along the eastern part of the Douro); and (c) the outbreak of *Phylloxera* in Portugal reduced supply from the historical vineyards. The combination of these factors made that demand from new Port vineyards increased, their costs fell and objections to strict regulations became stronger, and thus induced another large (eastward) expansion of the Port GI in 1907.

A very similar combination of factors stimulated the expansion of the Chianti in the beginning of the twentieth century. The political backers of the strict GI were removed from power with the fall of the Medici family in 1737. Later, the political power structure was further overhauled when Napoleon Bonaparte conquered northern Italy and went further south in Tuscany. Napoleon not only transformed the power structure but also the political economic philosophy by introducing the principles of the French Revolution. As Meloni and Swinnen (2016b) explain, the French Revolution had a major impact on French wine regulations as it liberalized the vineyard planting regulations and restrictions in France—something no other political change has managed to do before or since. And although Napoleon's regime did not liberalize the GI, it liquidated the old power infrastructures and with it much of the enforcement of the GI. In addition, as in Portugal, major infrastructure investments dramatically changed the relative costs of wine production regions. The establishment of a railway between the city of Siena and the port of Livorno

completely changed the comparative advantage of the wine regions in Tuscany, making it much cheaper for the vineyards around Siena to export their wines. The combination of these political, philosophical, and economic factors caused the expansion of the Chianti GI in 1932.

In summary, for trade was a crucial factor in the creation of ‘*terroir*’ in all cases, but there the mechanism was not always the same: exports to Britain for Port and Chianti; domestic trade to Paris for the Burgundy; and imports of wine (pushing down prices) for the Champagne. In addition, political factors (in particular the vested interests of the ruling politicians) are crucial factors in the precise delineations of the GI. Changes in political power structures, in combination with changes in the dominant philosophy and in (transport) infrastructure had a major impact on how GIs were expanded (or not) in the following years and centuries. When changes in political power removed the government that is close to the GI producers from power; when a new philosophy of belief in liberal and free markets spread across Europe and supported the removal of restrictions; and when infrastructure investments open up markets and make exports cheaper from “new” producers; this combination let do significant expansions of the GIs.

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TABLES

Table 1
Wine imports to Britain from 1675 to 1777, in hectoliters

	<i>France</i>		<i>Portugal</i>		<i>Spain</i>		<i>Italy</i>		<i>Other</i>		<i>Total</i>
	<i>1,000 hl</i>	<i>%</i>	<i>1,000 hl</i>	<i>%</i>	<i>1,000 hl</i>	<i>%</i>	<i>1,000 hl</i>	<i>%</i>	<i>1,000 hl</i>	<i>%</i>	<i>1,000 hl</i>
1675	71.5	62	0.2	0	38.3	33	0.3	0.2	5.1	4	115.4
1677	93.4	61	1.7	1	50.3	33	0.9	0.6	7.7	5	154.0
1688–1713: War periods between France and Britain*											
1713	24.3	16	55.9	37	39.7	26	11.7	7.7	20.6	13	152.2
1714	11.4	6	82.5	46	53.5	30	10.7	6.0	19.7	11	177.8
1715	12.1	6	98.6	48	64.6	31	4.5	2.2	27.6	13	207.4
1716	14.9	8	85.1	47	45.1	25	9.4	5.3	24.9	14	179.4
The following are the averages for ten-year periods beginning:											
1717	12.4	6	115.1	54	71.1	33	2.1	1.0	13.8	6	214.5
1727	8.1	4	116.5	53	80.8	37	2.3	1.0	11.2	5	218.9
1737	3.6	2	117.6	72	31.5	19	1.5	0.9	8.3	5	162.5
1747	4.7	3	98.4	66	36.9	25	1.1	0.7	8.3	6	149.4
1757	5.2	3	107.1	69	33.9	22	0.5	0.3	9.5	6	156.2
1767	4.7	3	113.1	69	33.9	21	0.7	0.4	11.5	7	163.9
1777	4.2	3	107.8	76	23.2	16	0.1	0.1	7.1	5	142.4

Note: During the wars, Britain prohibited the imports of French wines.

Sources: Francis (1972, p. 320) and Nye (2007, pp.38–41).

Table 2
Chronology of Wine Regulations in the Douro Wine Region, 1757– 1933

	<i>Wine Regulations</i>	<i>Description</i>
1756–1761	Primordial or Pombaline Delimitation	The first delimitation of the wine Douro Delimited Region (Douro DR) in northern Portugal. The exact boundaries were defined by 335 stones.
1756–1834	Establishment of the “General Company of Agriculture of the Vineyards of the Upper Douro” (the Company)	The Company regulated the production and trade of Port wines.
1788–1793	Subsidiary or Marian Delimitation	The Douro DR was enlarged and expanded to the east.
1834–1838	Abolishment of the Company’s privileges	Liberalization of the wine sector.
1838–1852	Reestablishment of the Company’s privileges	
1852–1865	Establishment of the “Regulatory Commission for Agriculture and Trade of the Wines of the Upper Douro”	Official institution composed of representatives of Douro winegrowers and traders.
1865–1907	Abolishment of the Regulatory Commission’s privileges	Liberalization of the wine sector.
1907	Third Delimitation	The Douro DR was further enlarged and reached the borders of Spain.
1907–1932	Regulation of Port wines	- New territorial delimitation of the Douro DR - Establishment of the “Viticulture Commission of the Douro Region”
1933	Establishment of the Port Wine Institute (becomes the Douro and Port Wine Institute in 2003)	Quality control and official certification, promotion and defense of the Appellation of Port wines

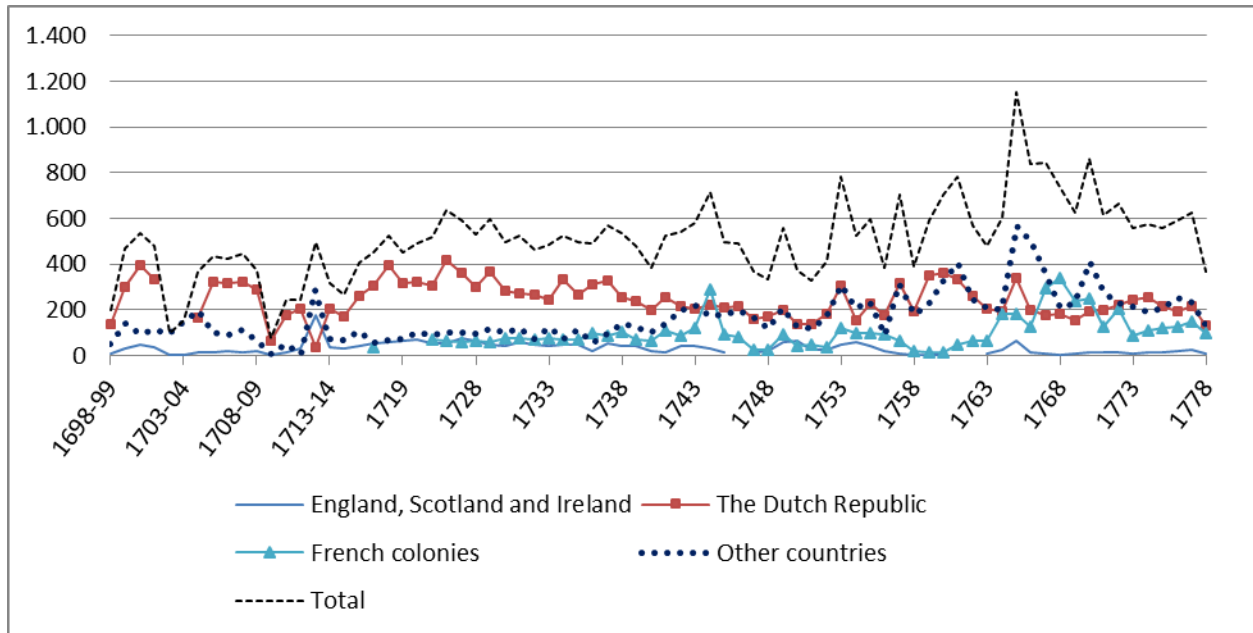
Table 3
Chronology of Wine Regulations in the Granduchy of Tuscany, 1583– 1716

	<i>Wine Regulations</i>	<i>Description</i>
1542, Jan. 16	Bando sul divieto di vender Vino. [<i>Decree on the prohibition to sell wine</i>]	Prohibition to sell wine in quantities smaller than the <i>Fiasco</i> (2,28 liters)
1574, Oct. 4	Riforma del Sale. [<i>Salt Reform</i>]	- Prohibition to sell wine in quantities smaller than the <i>Fiasco</i> (2,28 liters) - Obligation to separate local wine from imported ones
1575, Oct. 11	Bando diretto agli Osti e agli Albergatori. [<i>Decree applying to Hosts and Hoteliers</i>]	Prohibition to buy wine in order to resell it
1583, July 15	Decreto sopra il modo di vendemmiare dalle dodici miglia in qua verso Firenze. [<i>Decree on the method to harvest in twelve miles from Florence</i>]	Prohibition to anticipate grape harvest
1604, Aug. 4	Bando per causa de vini guasti. [<i>Edict on rotten wines</i>]	Prohibition to sell rotten wines and to blend them with superior wines
1692, Aug. 23	Del bando de' Vini guasti. [<i>Edict on rotten wines</i>]	Prohibition to sell rotten wines and to blend them with superior wines
1698, Feb. 21	Bando per la facoltà di stillare Acquavite. [<i>Edict on the faculty to distil wine</i>]	Wine could be distilled and exported to foreign countries.
1704, Sept. 29	Rinnovazione delle leggi in materia di vino, macello, poste, procacci, vetturini ecc. [<i>Modification of the laws on wine, butcher, post, business finders, coachmen etc.</i>]	The law restated the prohibition for hosts and hoteliers to buy wine in order to resell it; and maintained high duties for wines travelling inland
1705, Sep. 5	Moderazione della nuova Legge del Vino del novembre 1704. [<i>Restatement of the new Wine Law dated November 1704</i>]	Wine trade was liberalized. The only restriction was during the days of market, fair or public holiday, where wine sale was admitted on payment of a tax
1716, July 18	Bando sopra il commercio del vino. [<i>Edict on Wine Trade</i>]	The edict established a <i>Congregazione</i> that controlled wine production, its shipment, trade and the possible frauds
1716, Sept. 24	Bando sopra la dichiarazione de' confini delle quattro regioni Chianti, Pomino, Carmignano e Val d'Arno di sopra. [<i>Edict upon the declaration on the boundaries of four regions Chianti, Pomino, Carmignano e Val d'Arno di sopra</i>]	The edict delimited the boundaries of Chianti wine growing area

Sources: Cantini (1806); Rombai, et al. (2000) and Pult Quaglia (2007).

FIGURES

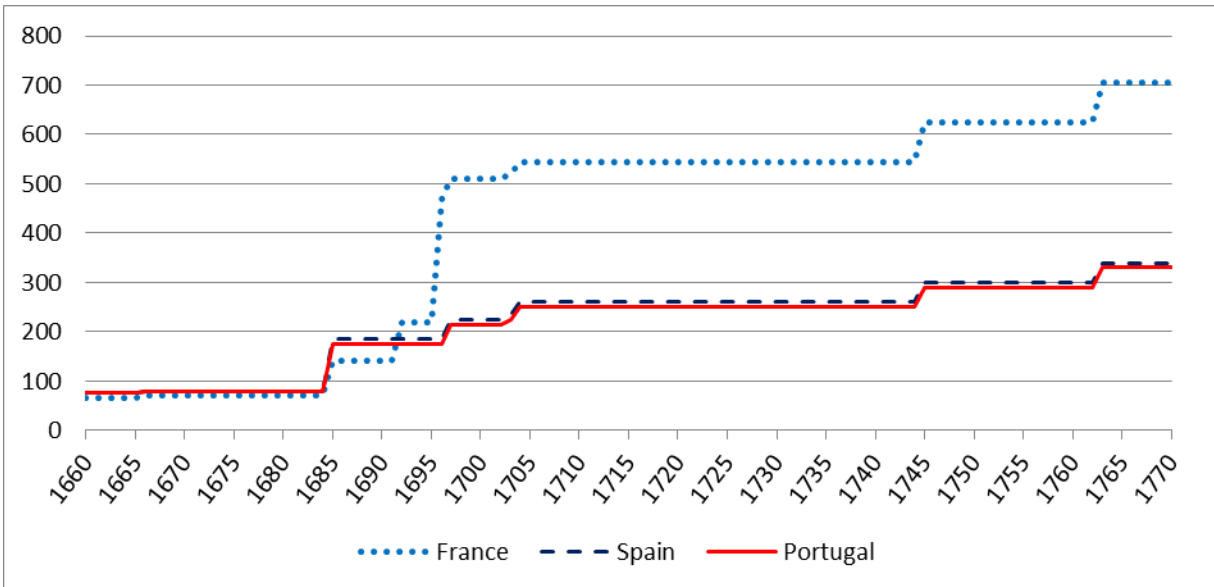
Figure 1
**Bordeaux Wine Exports by Major Importing Countries (1698–1778),
in thousands hectoliters**



Note: “Other countries” refers to the total Bordeaux wine exports to the Ports of the Baltic Sea, Denmark, Italy, Norway, Russia, Southern Netherlands, Spain and Sweden.

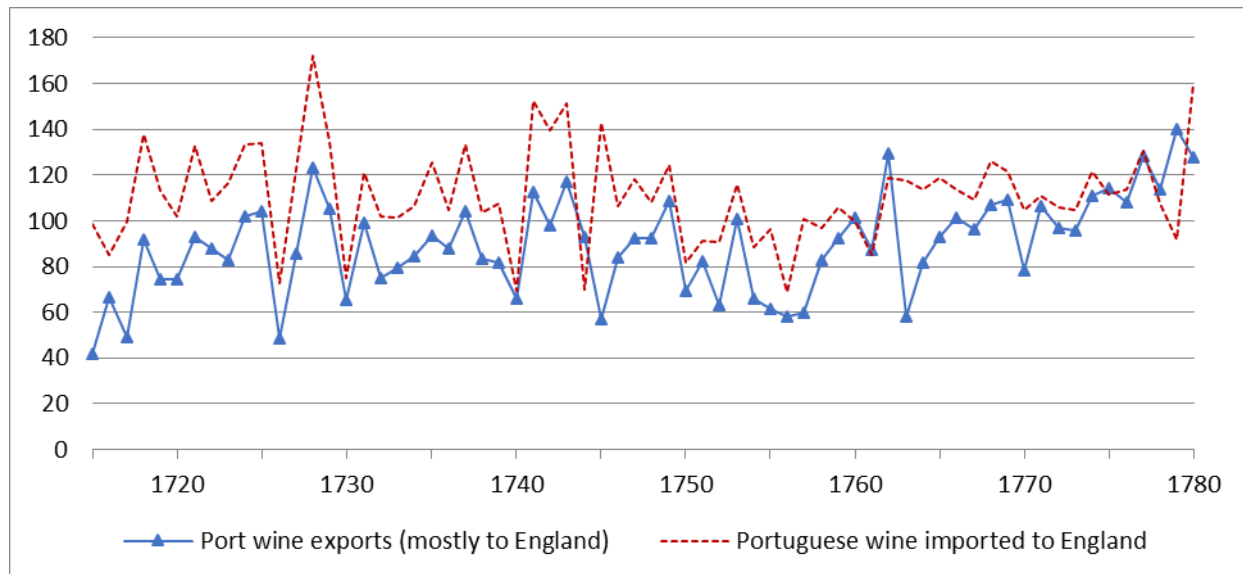
Sources: Huetz de Lemp (1975, p. 45) and Malvezin (1892, pp. 318–321).

Figure 2
British Wine Tariffs, by source (1660–1770), in UK Pounds per hectoliters



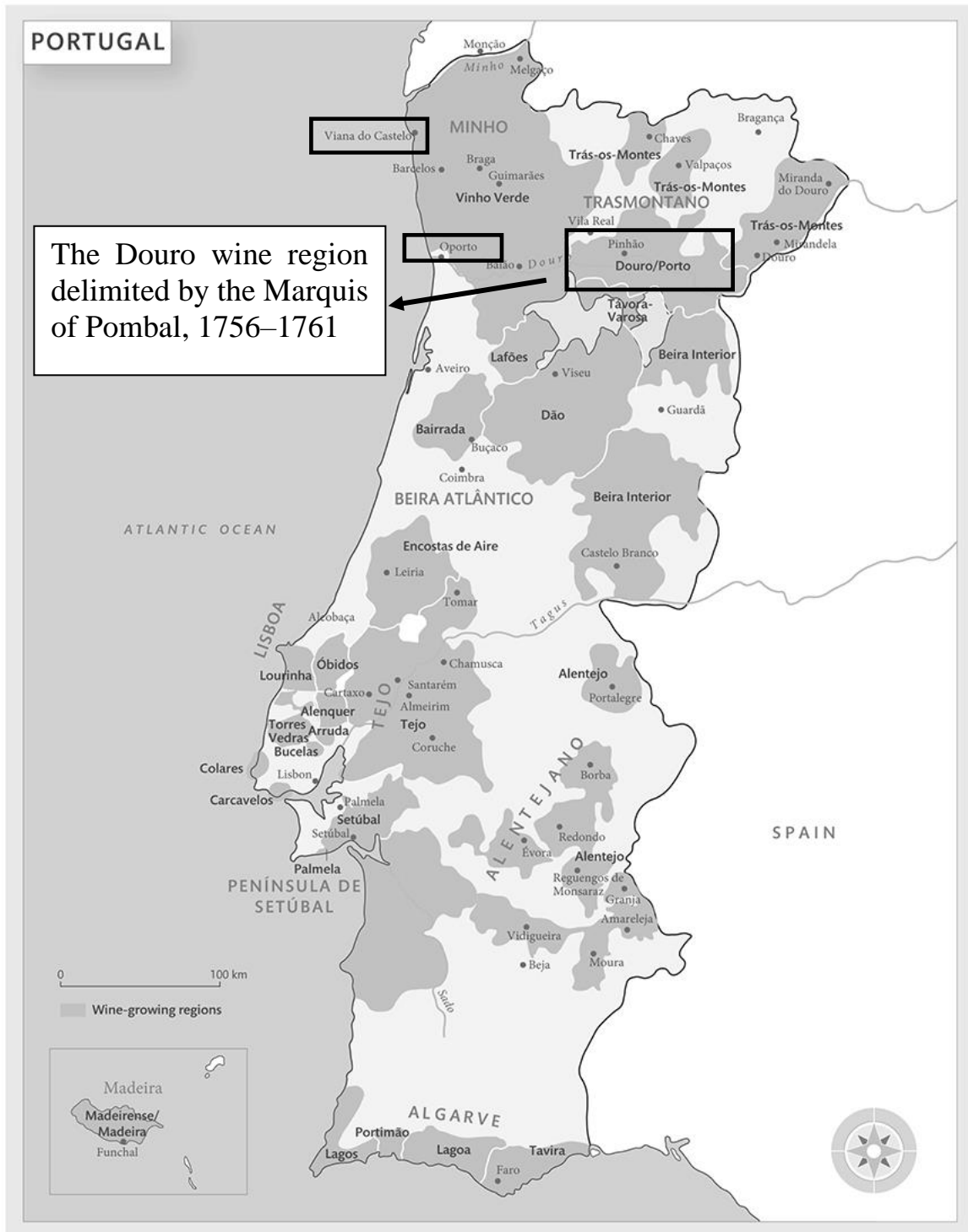
Source: Ludington (2013, Table A1, pp. 261–265).

Figure 3
Port and Portuguese Wine exports to England (1715–1791), in thousand hectoliters



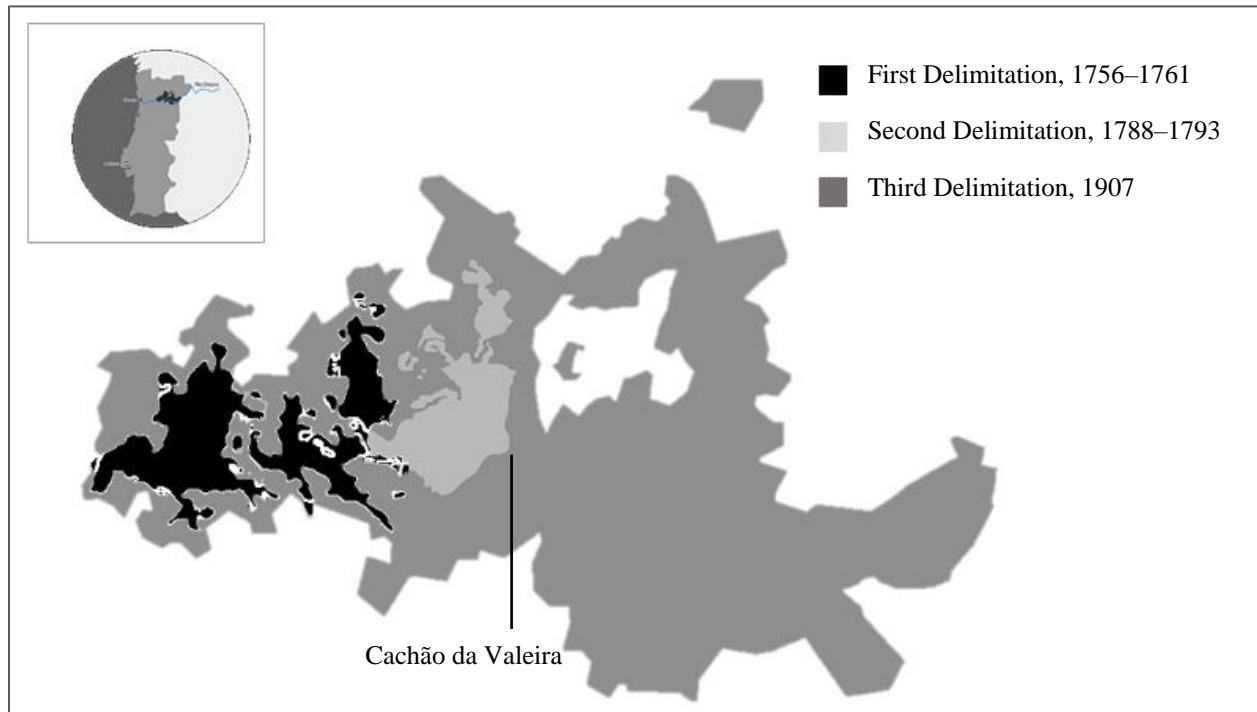
Sources: Forrester (1850, table B, 19–20); Schumpeter (1960, tables 16 and 17). In: Ludington (2013, pp. 147 and 153).

Figure 4
Portugal and the Douro Wine Region



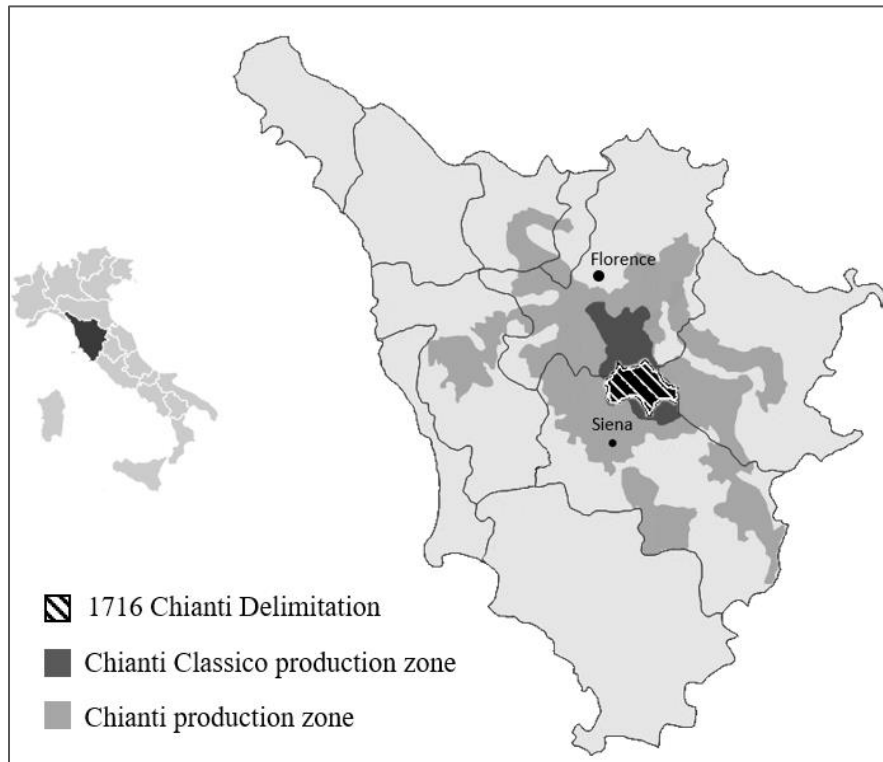
Source: Adapted from Robinson and Harding, 2015 (available at <http://www.jancisrobinson.com/ocw/detail/portugal>).

Figure 5
The Historical Evolution of the Douro Wine Region



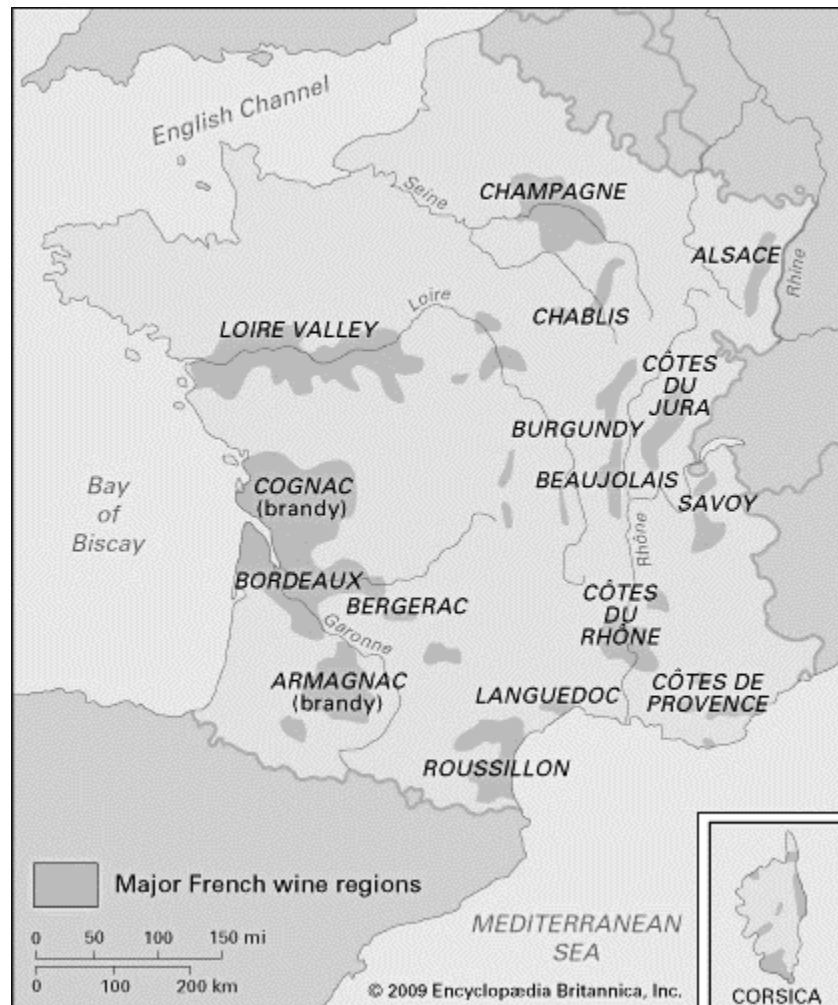
Source: Adapted from Museu do Douro (2017).

Figure 6
“Chianti” and “Chianti Classico” Wine in Tuscany



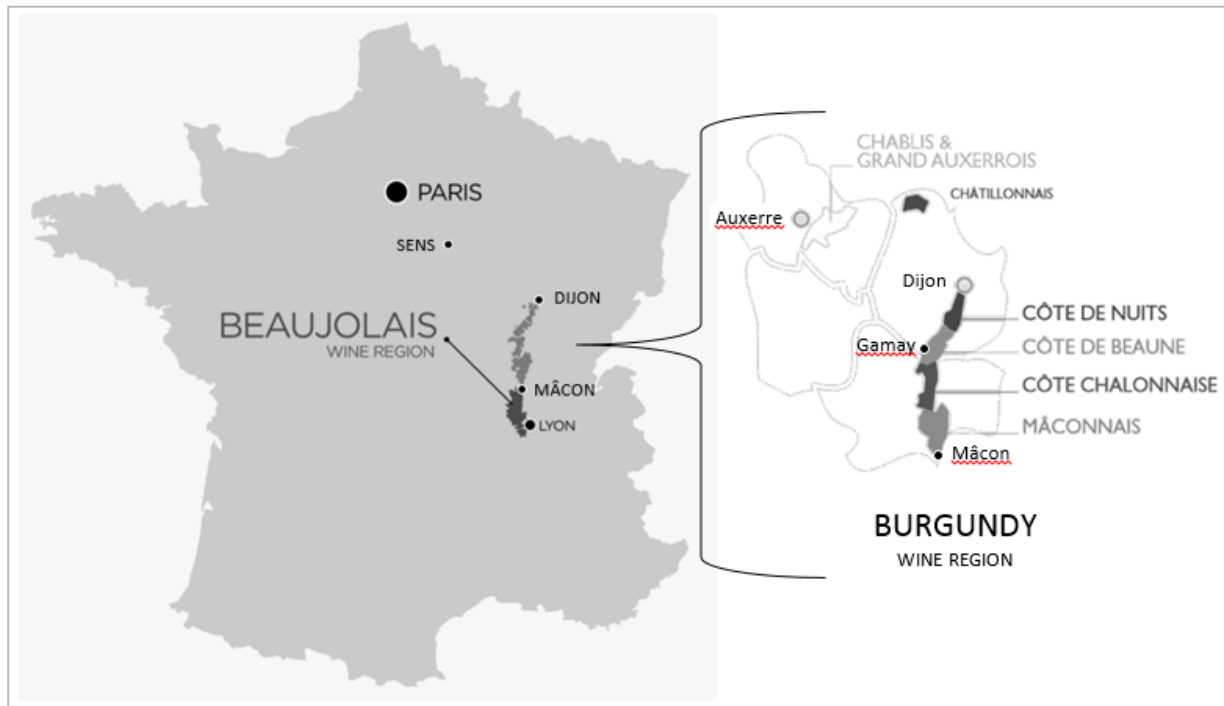
Source: Adapted from Kattivik (2007).

Figure 7
Map of Wine Regions in France



Source: Britannica (2009). In: Amerine (2016).

Figure 8
The Burgundy and Beaujolais Wine Region



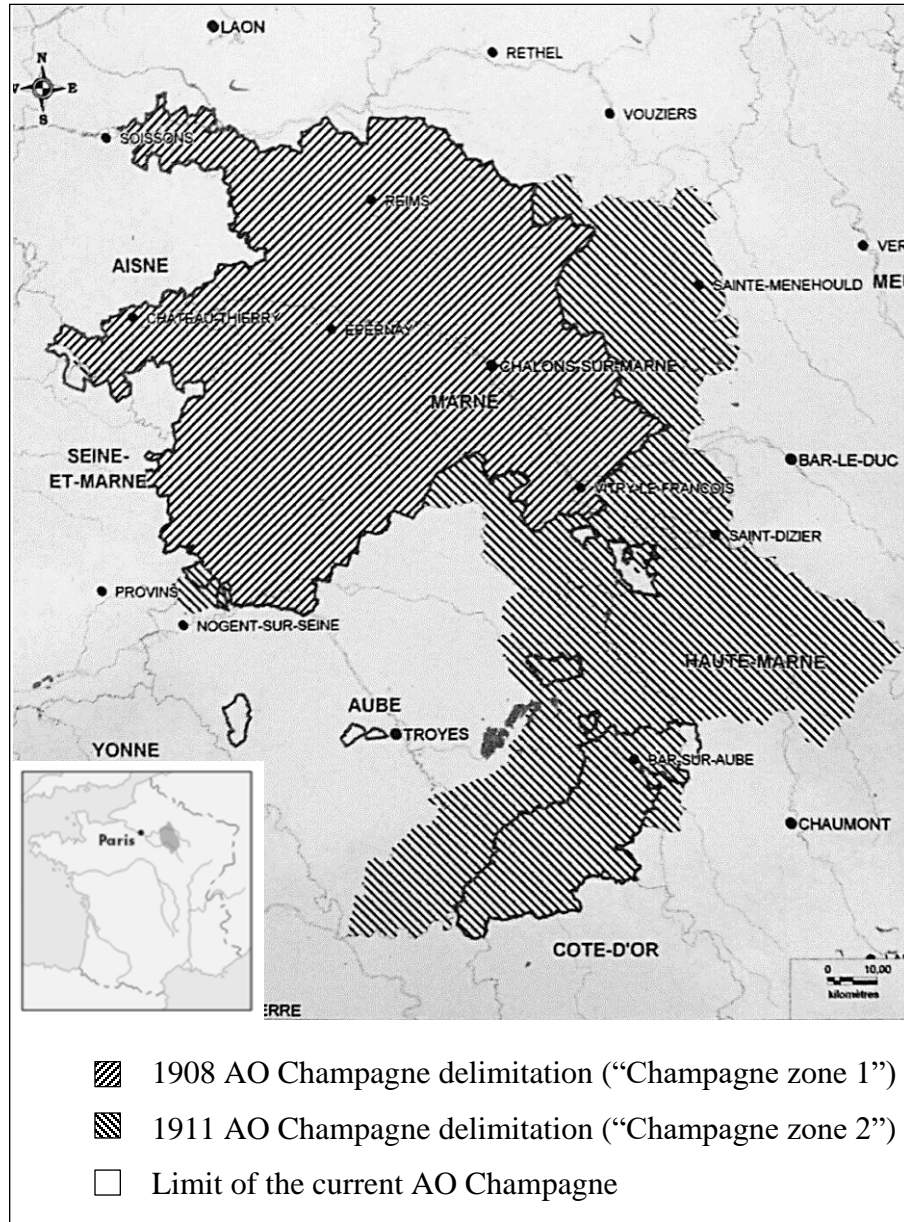
Note: The Burgundy wine region, located in north eastern France, has five wine growing areas with, from north to south, *Chablis*, *Côte de Nuits* (named after its main town of Nuits-Saint-Georges), *Côte de Beaune* (named after its main town of Beaune), *Côte Chalonnaise* (named after its main town of Chalon-sur-Saône), and *Mâconnais* (named after its main town Mâcon).

Note 2: The famous “Côte d’Or”, the heart of the Burgundy wine regions, is composed of two sub-regions: *Côte de Nuits* and *Côte de Beaune*.

Note 3: The Beaujolais wine region is located south of the Burgundy wine region.

Sources: Adapted from BIVB (2017) and Larson (2013).

Figure 9
The Historical Evolution of the Champagne Wine Region



Note: In 1908, the French government decided to restrict the area from which “Champagne” wine could be produced to the Marne and Aisne departments. In 1911, the government created a second Appellation of Origin (AO) called “Champagne zone 2” encompassing the Aube, Haute-Marne and Seine-et-Marne departments.

Source: Toulemonde Le Ny (2013: p. 218).

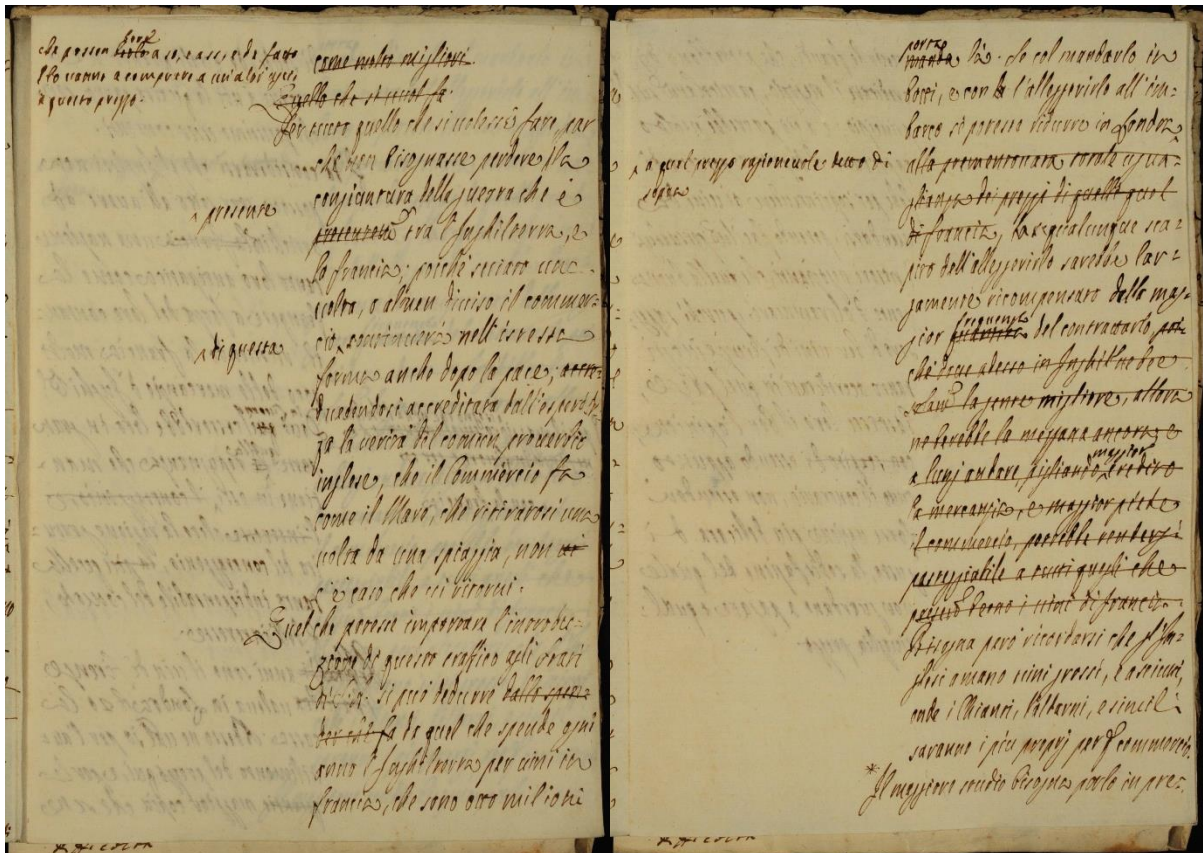
**APPENDIX 1—Extracts from the 1716 Edict Issued by the Grand Duke of Tuscany,
Cosimo III de' Medici**

Extract 1: *«(...) per il Chianti è restato determinato e sia. Dallo Spedaluzzo fino a Greve; di là a Panzano, con tutta la Podesteria di Radda, che contiene tre terzi, cioè Radda, Gajole e Castellina, arrivando fino al confine dello Stato di Siena. (...) E tutti quei vini che non saranno prodotti e fatti nelle regioni sopra confinate, non si possano e devano sotto qualsiasi pretesto (...) contrattare per navigare per vino Chianti (...)».* [Translation by the authors. «(...) for the Chianti it has been defined from Spedaluzzo to Greve; then to Panzano, with the territory of Radda, which includes the three townships of Radda, Gaiole and Castellina, up to the borders of the state of Siena. (...) and all the wines that are not produced in the above-confined regions cannot and will not by any reason be bought or traded as Chianti wine (...)»]

Extract 2: *«Motu proprio, s'è l'A. Sua Reale risoluta ad ordinare una nuova Congregazione quale invigili, che i vini, che sono commessi per navigare, siano muniti alla spedizione con la maggior sicurezza per le qualità loro, e tutto per ovviare alle frodi, che ne potrebbero nascere, avendo a tal effetto concesso alla medesima Congregazione un'ampia facoltà, ed autorità sopra tal commercio»* [Translation by the authors. «On his own impulse, His Royal Highness determined to establish a new Congregation that guarantees that the wines allowed to be traded are provided for the shipment with the maximum safety for their quality, and everything is settled to avoid frauds that could arise from it, for this the mentioned Congregation has been granted authority over this commerce.»]

Source: Cantini (1806, Tomo XXII, pp. 203–205).

APPENDIX 2—Extracts from the Letter of Lorenzo Magalotti
In: Manoscritti Magalotti, Archivio di Stato di Firenze



“(…) we must not miss the present war conjuncture between England and France; (…) remember that the Trade behaves as the Sea, which once withdrew from a beach, it is not uncommon that returns there (…). We need to learn that the introduction of this trade (…) can be inferred from that what England spends for wines in France, which are eight million crowns (…). However, we must remember that the British love red and dry wines, so Chianti (…) would be the most appropriate to trade (…). To prevent fraud that could discredit the trade (…) trustworthy people have to oversee the wines (…)”]

[Translation by the authors. “(…) non bisognasse perdere la congiuntura dalla Guerra che è presente tra l’Inghilterra e la Francia; (…) che il Commercio fa come il Mare, che ritirandosi una volta da una spiaggia, non è raro che vi ritorni (…). Quel che occorre imparare l’introduzione di questo traffico (…) si può dedurre da quel che spende ogni anno l’Inghilterra per vini in Francia, che sono otto milioni di scudi (…). Bisogna però ricordarsi che gli Inglesi amano vini rossi, e asciutti, onde il Chianti (…) saranno i più propizi per il commercio. (…) Per prevenire le frodi che potrebbero discreditar il negozio (…) servono persone di fede per sovrintendere ai vini (…)”]